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ENVIRONMENTAL HEALTH GUIDE FOR TRAVEL TRAILER PARKING AREAS WITH A RECOMMENDED ORDINANCE

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ENVIRONMENTAL HEALTH GUIDE FOR TRAVEL TRAILER PARKING AREAS

WITH A RECOMMENDED ORDINANCE

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16. Abstracts The purpose of this guide is to provide the latest environmental health guidelines to persons responsible for or concerned with planning, designing, operating, and maintaining travel trailer parking areas, and for reference in developing federal, state, or local ordinances, law, or regulations applicable to travel trailer parking areas. Topics covered include site planning, water supply, sewage disposal, service building, refuse handling, insect and rodent control, electrical distribution, fuel supply and storage, fire protection and safety, and a suggested ordinance. References are included. A companion guide entitled "Environmental Health Guide for Mobile Home Parks" is also available.

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FOREWORD

DURING AND following World War II, trailer coaches provided inexpensive year-round living accommodations to large numbers of Americans, primarily construction workers and military personnel moving about the country. Units manufactured at that time were relatively small and easily transported and consequently became quite popular. However, in many instances, parking facilities for the thousands of these units in use during the post-War period were far from satisfactory because of poor site location and general insanitary conditions. Health authorities and the trailer manufacturing industry, prompted by reports of such poor conditions, asked the Public Health Service to develop a trailer court sanitation manual with suggested ordinances and regulations. Such a manual, containing recommended sanitation standards needed to meet the health and safety requirements of Federal, State and local authorities, was issued by the Public Health Service in 1953 and was entitled "Trailer Court Sanitation".

Following 1953, in response to public demand and consumer trends, manufacturers began producing larger and better equipped versions of the trailer coaches known as *mobile homes*. The mobile home, usually placed at a fixed location for two years or more, provides ample space, modern appliances, and other facilities for comfortable family living. This development prompted the revision of "Trailer Court Sanitation" which was reissued in 1960 under the title "Mobile Home Park Sanitation".

Associated with the development of mobile homes for permanent living was the continued development of the smaller, more mobile version of the trailer coaches now referred to as travel trailers. Travel trailers and related vehicles which have been growing in popularity in recent years, are used primarily for recreation and vacation purposes rather than for year-around living.

Potential health hazards exist in some travel trailer parking areas where insanitary conditions have been created by failure to give proper attention to such elementary problems as overcrowding of the vehicles and improper disposal of sewage and refuse from trailers. The widespread use of trailers provided with convenient holding tanks for sewage wastes has often led to the indiscriminate dumping of sewage in parking areas, along highways, and in recreation areas where acceptable sewage disposal facilities, such as the newly developed *Sanitary Station* are not provided. Such conditions endanger not only the health of the trailerist but also that of residents of adjoining communities.

Many State and municipal health and other regulatory authorities, as well as developers and builders of travel trailer parking areas, are recognizing that there is now a pressing need for more properly constructed and maintained travel trailer parking areas specifically designed to serve the increasing numbers of people using travel trailers and other recreation vehicles. Developers and builders of these parking areas have expressed concern because of the absence of uniform design standards which can be applied to the many types of travel trailer parking areas being developed in and near municipalities and recreation areas across the Nation.

To meet this need, the Special Engineering Services Branch, Division of Environmental Engineering and Food Protection, Public Health Service, in close cooperation with the Mobile Home Manufacturers Association, has developed "Environmental Health Guide for Travel Trailer Parking Areas." The purpose of this guide is to provide the latest environmental health guidelines to persons responsible for or concerned with planning, designing, operating and maintaining travel trailer parking areas, and for reference in developing Federal, State, or local ordinances, laws or regulations applicable to travel trailer parking areas. A companion guide entitled "Environmental Health Guide for Mobile Home Parks" (a revision of "Mobile Home Park Sanitation") has been developed for those interested in the design, operation, and maintenanceof mobile home parks.

Deep appreciation must be expressed to the Mobile Homes Manufacturers Association for printing and distributing this publication as a public service.

WESLEY E. GILBERTSON, CHIEF
Division of Environmental Eengineering
and Food Protection
U. S. Public Health Service

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Fig. 1 Self-Contained Trailers Provide Many of the Comforts of Home

INTRODUCTION

Vacation travel by means of trailers is becoming more popular each year. The ability to visit almost any part of the country and take along many of the comforts of home is appealing to many travelers.

Trailers now being produced can be equipped with almost any modern comfort that may be desired. The camping trailer, for instance, is a type of trailer that usually consists only of a folding tent on wheels. By comparison, there are trailers available which are essentially self-contained, having sleeping, cooking, and dining facilities plus a kitchen sink, shower, lavatory, and flush toilet.

Associated with increasing amounts of leisure time and vacation travel, trailers are being used more extensively for such recreational activities as hunting, fishing, camping, sight-seeing, and long vacation trips. This is reflected in the steadily increasing sales of travel trailers. In 1956, there were 15,370 travel trailers produced; in 1960, annual production increased to 40,300 units; and by 1964 there were 85,000 travel trailers being produced annually, in addition to 60,000 camping trailers and 65,000 pickup coaches for a total of 215,000 recreational vehicles.

It is estimated that in 1964 there were about 400,000 travel trailers being used by approximately one million people and there were more than 2,000 privately owned parks and 1,200 National and State parks, monuments, and forests providing accomodations for trailers and trailerists.

The increasing use of all kinds of trailers for leisure activity has, in many areas, overtaxed the accommodations provided for their use. The lack of high quality parking areas to keep pace with the increasing use of trailers can be attributed, in part, to four factors: (1) the relatively recent development and rapid growth of the trailer industry; (2) the many variations in trailer design which necessitates correspondingly variable facilities; (3) the lack of proper State and local regulations to control the design, construction, and operation of parking areas; and (4) the lack of information and guidelines for proper planning of such areas.

The information and recommended standards in this guide were developed to help minimize or eliminate health and safety hazards in travel trailer parking areas. Adherence to the recommendations of this guide in the design and operation of parking areas and adherence to AMERICAN STANDARD INSTALLATIONS OF PLUMBING, HEATING, AND ELECTRICAL SYSTEMS IN TRAVEL TRAILERS, A 119.2-1963 (see reference No. 1), in the construction of trailers provides added assurance of a reliable, healthful, and safe environment for the travel trailer user.

DEFINITIONS:

Health Authority: The legally designated health authority or its authorized representative of the political subdivision concerned.

Sanitary Station: A facility used for removing and disposing of wastes from trailer holding tanks.

Service Building: A structure housing toilet, lavatory and such other facilities as may be required.

Service Sink: A slop sink with a flushing rim for the disposal of liquid wastes from trailers.

Sewer Connection: The sewer connection consists of all pipes, fittings and appurtenances from the drain outlet of the trailer to the inlet of the corresponding sewer riser pipe of the sewerage system serving the travel trailer parking area.

Sewer Riser Pipe: That portion of the sewer lateral which extends vertically to the ground elevation and terminates at each trailer space.

Trailer: The following shall be considered a trailer:

Travel Trailer: A vehicular, portable structure built on a chassis, designed as a temporary dwelling for travel, recreation and vacation, having body width not exceeding 8 feet and its body length does not exceed 32 feet.

Pick-Up Coach: A structure designed to be mounted on a truck chassis for use as a temporary dwelling for travel, recreation and vacation.

Motor Home: A portable, temporary dwelling to be used for travel, recreation and vacation, constructed as an integral part of a self-propelled vehicle.

Camping Trailer: A canvas, folding structure, mounted on wheels and designed for travel, recreation and vacation use.

Trailer, Dependent: A trailer which is dependent upon a service building for toilet and lavatory facilities.

Trailer, Self-Contained: A trailer which can operate independent of connections to sewer, water and electric systems. It contains a water-flushed toilet, lavatory, shower and kitchen sink, all of which are connected to water storage and sewage holding tanks located within the trailer.

Trailer Space: A parcel of land in a travel trailer parking area for the placement of a single trailer and the exclusive use of its occupants.

Travel Trailer Parking Area: A parcel of land in which two or more spaces are occupied or intended for occupancy by trailers for transient dwelling purposes.

Trailer Stand: That part of an individual trailer space which has been reserved for the placement of a single trailer and its accessory structures.

Water Connection: The water connection consists of all pipes, fittings and appurtenances from the water riser pipe to the water inlet pipe of the distribution system within the trailer.

Water Riser Pipe: That portion of the water supply system serving the travel trailer parking area which extends vertically to the ground elevation and terminates at a designated point at each trailer space.

Watering Station: A facility for supplying water storage tanks of trailers with potable water.

SITE PLANNING

Location and Area of Site

Sites selected for travel trailer parking areas should be well drained and free from topographical or geological hindrances or other conditions unfavorable to proper enjoyment by users. Sites should not be located near swamps, marshes or other breeding places for insects and rodents, or heavy industrial zones with objectionable odors or noise. The availability of an adequate water supply and satisfactory means of sewage disposal are basic considerations in selecting a suitable site. Consideration should also be given to accessibility to main roadways and tourist services such as restaurants and shopping areas. Before land is acquired for trailer use, the health authority and other local agencies such as zoning and planning commissions should be consulted regarding the compliance of the proposed site with local requirements.

The location of travel trailer parking areas in or near commercially-zoned districts is acceptable since the travel trailerist is dependent upon commercial establishments such as food stores, restaurants, and service stations. However, travel trailer parking areas should be separated from commercial operations to the extent that they will not detract from the aesthetic or scenic qualities or hamper the proper operation of the parking area.

The size of the travel trailer parking area must be sufficient to accommodate: (1) the desired

number of trailer spaces; (2) parking for motor vehicles; (3) access roads and walkways; (4) service buildings, sanitary stations, watering stations, and other structures; and (5) recreation areas. Additional space must be provided if service areas are to be included.

Figures 2a, 2b, and 2c illustrate typical designs of a travel trailer parking area. Many variations from this design are possible; however, the site plan that is used should be based on all existing environmental conditions. Local conditions that might affect a particular site plan include: the size, shape, and topography of the site and surrounding area; land costs; local codes and ordinances; and the uses of adjacent property.

Roads

Roads in travel trailer parking areas should provide for convenient vehicular circulation; and pavements should be of adequate widths to accommodate the expected parking and traffic load.

One-way roads are frequently used along with two-way roads to make the most effective use of the available land and as an aid in preserving scenic topography. The following minimum widths should apply to parking area roads:

One-way, with no parking .....11 feet
(Acceptable only if less than 500 feet total length and serving less than 25 trailer spaces.)

One-way, with parking on one side only, or Two-way, with no parking ....18 feet
(Acceptable only if serving less than 50 trailer spaces.)

Two-way, no parking .....24 feet

Two-way, with parking on one side only .....27 feet

Two-way, with parking on both sides..34 feet

Curves should have a radius large enough to insure easy and safe turns for car and trailer. A radius of at least 40 feet is recommended, since any smaller radius requires that 3 feet of widening be added to the inside edge of the pavement; in no case should the curve radius be less than 25 feet. If cul-de-sacs are used, adequately paved vehicular turning space should be provided; a turning circle of at least 80 feet in diameter is usually necessary.

Road grades should be minimum since some trailers may be a heavy load for the towing vehicle. Maximum grades of minus 6 percent and plus 4 percent are recommended. All roads and parking spaces should preferably be paved, or at least treated sufficiently to provide an all-weather surface and control dust.

Types of Parking Areas

Travel trailer parking areas can be classified into two basic types — overnight and destination. the overnight type is usually located along or near main highways, where trailerists stop for only one or two nights on the way to some further destination. The destination type is usually located at or near a scenic, historical, or outdoor recreational area where trailerists are attracted for extended stays of several days or weeks.

Generally, the destination type travel trailer parking area should have more elaborate facilities than the overnight type, such as individual water and sewer service connections, a lower density of parking spaces, laundry facilities, and possibly a recreation building.

Trailer Spaces

Trailer spaces may be classified as either drive-through or back-in types. Drive-through spaces facilitate quick and easy parking and they are generally preferred in most situations, being particularly desirable in overnight type parking areas where the trailerist seldom desires to disconnect the towing vehicle. Back-in spaces are useful in destination type parking areas where the tow vehicle is frequently used independent of the trailer and they also help to make more effective use of the available area. Many parking areas will have combinations of both types of spaces, the actual proportion depending upon the size and shape of the parking area and the anticipated numbers of overnight and extended stay trailerists. Typical designs for drive-through and back-in spaces are shown in Figures 3 and 4.

The size of trailer spaces can be varied to accommodate different size trailers. Most trailers have widths of up to 8 feet and lengths of 35 feet or less while most towing vehicles have widths of up to 7 feet and lengths of 20 feet or less. The spaces should be large enough to permit at least a 10 foot clearance between adjacent trailers and between trailers and buildings or other structures. It may be desirable to increase design clearance to 15 or even 20 feet in destination type parking areas to allow more privacy to trailerists and to permit the use of patio awnings or other attachments. Any structures attached to trailers, such as carports, awnings, or storage facilities should

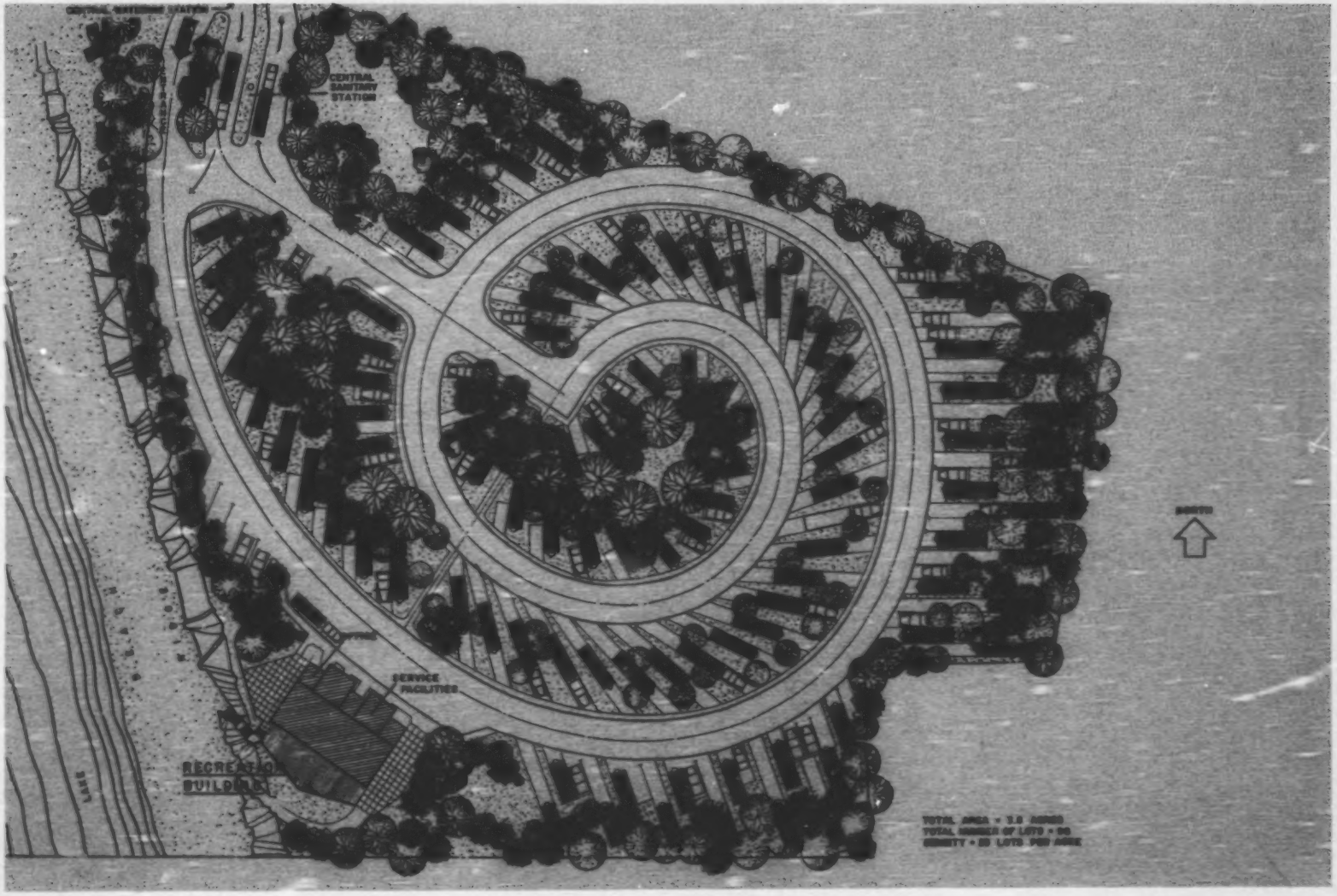
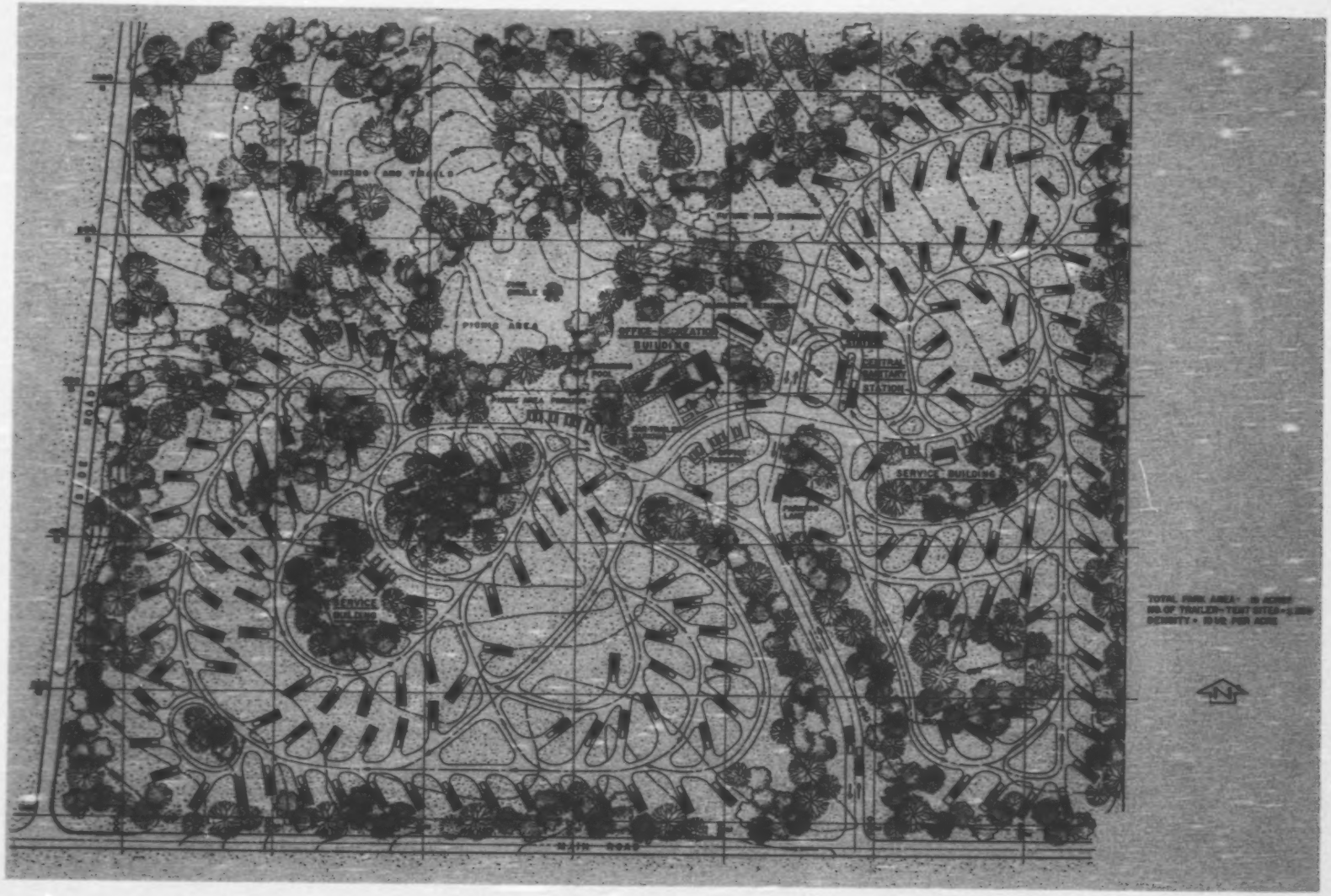


Fig. 2a Typical Travel Trailer Parking Area

Fig. 2b Typical Travel Trailer Parking Area



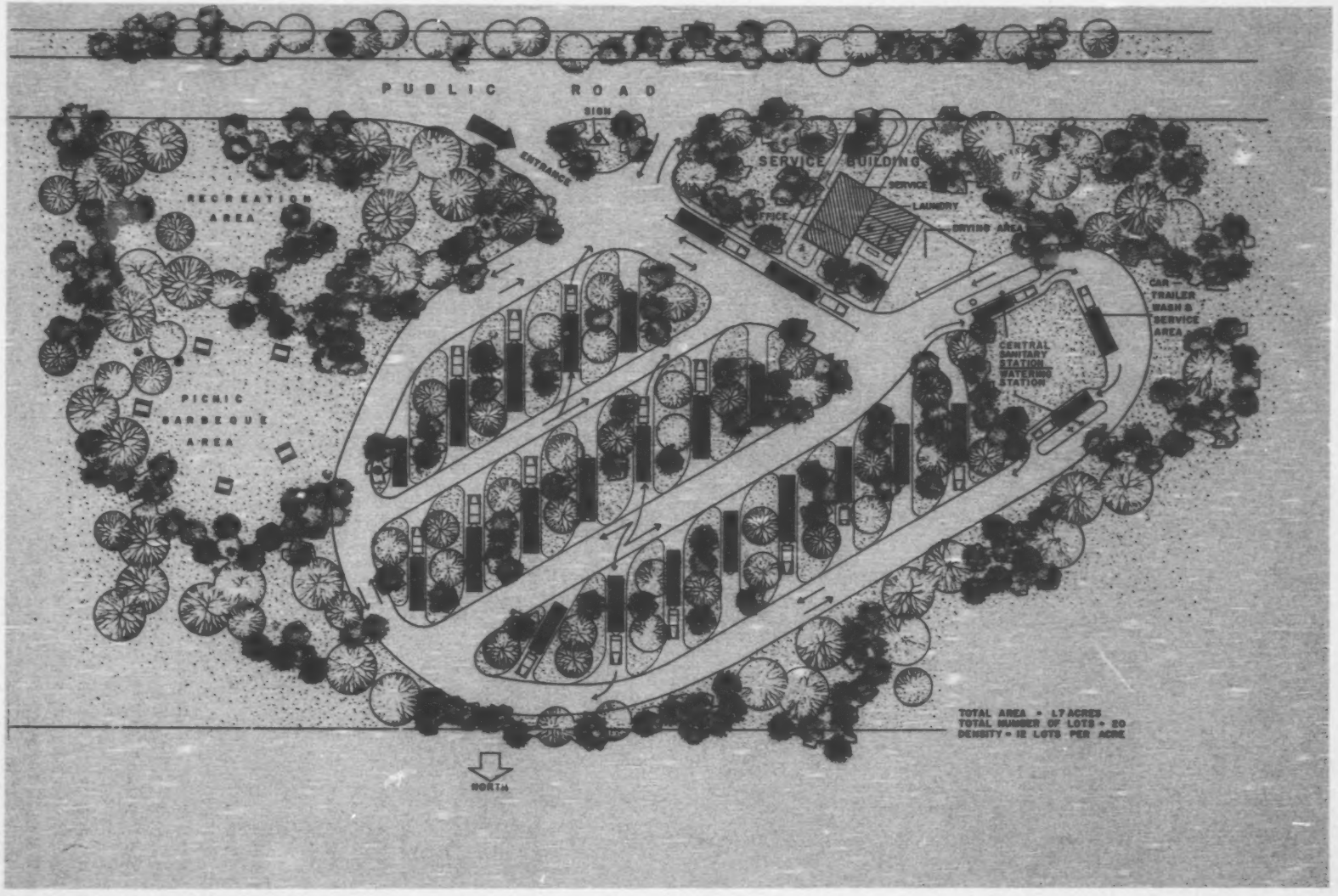


Fig. 2c Typical Travel Trailer Parking Area

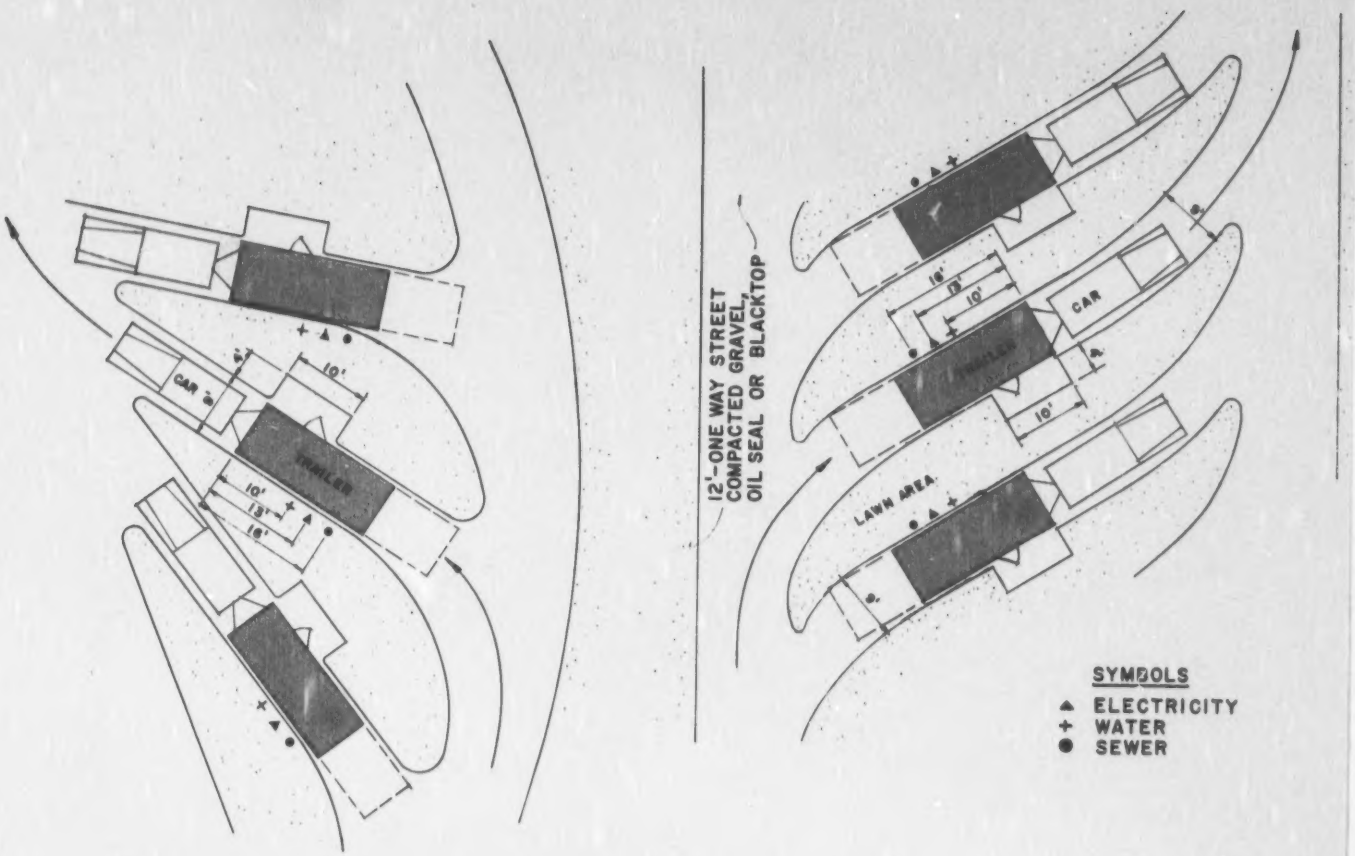


Fig. 3 Typical Drive-Through Parking Spaces

be considered as part of the trailer when determining clearances. Trailer spaces should be located at least 25 feet from any parking area boundary line abutting upon a public street or highway.

All parking areas should be provided with convenient vehicular access from abutting public streets or roads to each trailer space. Curbing the entrance and exit to each space is desirable to protect the spaces from careless driving. The inside radii of entrances and exits should be at least 40 feet to facilitate the maneuvering of trailers. Angular parking as shown in Figures 3 and 4 is recommended for use with both drive-through and back-in spaces to facilitate parking.

Trailer spaces should be provided with a paved or other suitable all weather surface of adequate size to support the trailer and tow vehicle. Bituminous mixes, cement concrete, and compacted graded stone are examples of satisfactory surfacing materials. The paved surface within the trailer space should be wide enough, or an apron should be provided, to assure the trailerist will have firm footing when stepping from or into the trailer.

Experience has shown that it is difficult to obtain proper design and to maintain adequate environmental sanitation in parking areas designed with more than 25 trailer spaces per gross acre. Thus, 25 spaces per acre should usually be considered the maximum permissible density. Where excessive land costs exist, unusual topographical or geological features occur that limit available space, or other unusual conditions exist, an increase in the number of trailer spaces per acre can be allowed; however, all other requirements, such as clearances and provision of required facilities must be maintained.

Recreation Areas

All parking areas should contain at least one easily accessible recreation area.

The total amount of recreation area provided should equal at least 8 percent of the gross site area with a minimum of 2,500 square feet. To

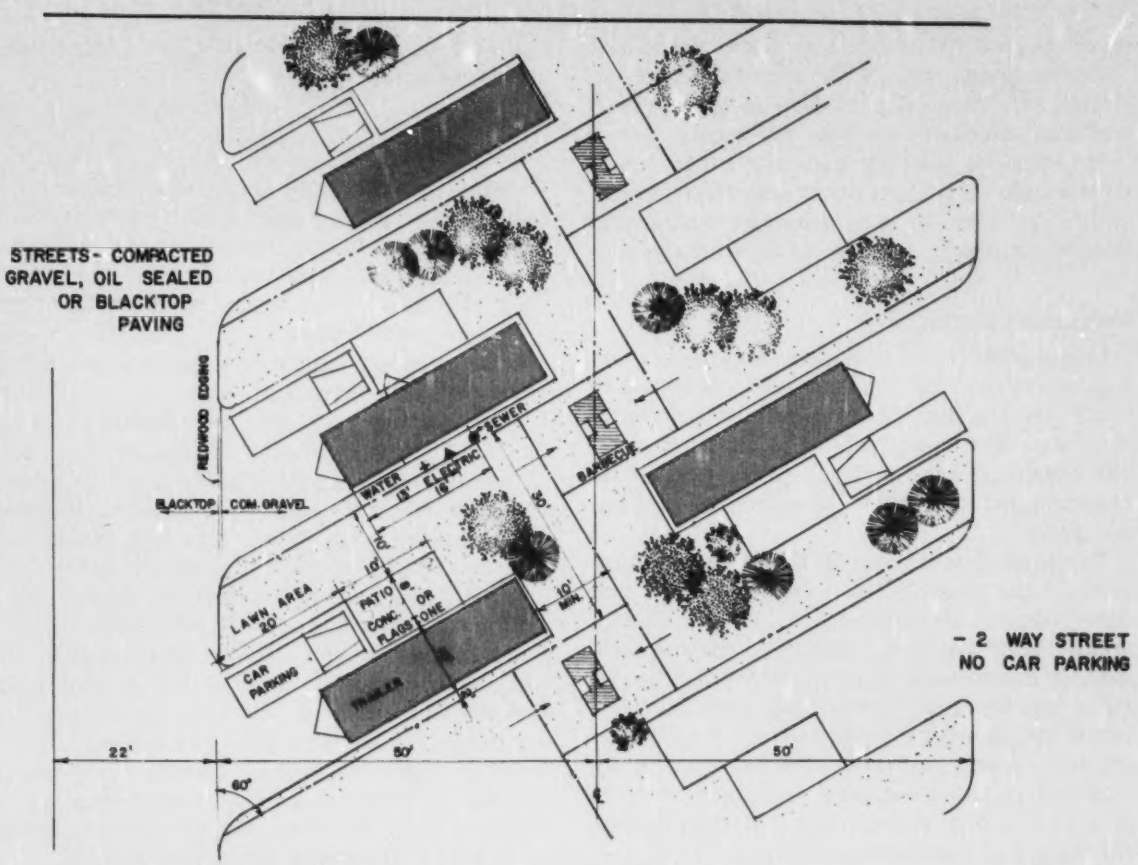


Fig. 4 Typical Back-In Parking Spaces

serve the interests of as many trailerists as possible, the recreation area should be adaptable to several different activities. For instance, with proper planning it should be possible to simultaneously conduct such activities as badminton, croquet, or softball in adjacent parts of one recreation area.

Because destination type parking areas are usually located near major recreational areas such as skiing, hiking, hunting, fishing, or swimming areas, the recreation facilities that are provided in the parking area should be chosen to supplement the facilities of the recreational area. Picnic and game areas and child-play equipment are examples of good supplemental facilities.

For safety reasons, the recreation area should always be located where it will be free of traffic hazards. It may also be desirable to provide some sort of buffer zone around the area such as trees, bushes or other vegetative growth.

When swimming pools are provided they should be constructed and operated in accordance with all applicable State and local requirements and regulations. Where local regulations are inadequate, or do not exist, the provisions of the SUGGESTED ORDINANCE AND REGULATIONS COVERING PUBLIC SWIMMING POOLS (see reference No. 2), prepared by the Joint Committee on Swimming Pools and Bathing Places, can be applied.

Service Areas

Service areas, such as storage facilities, clothes drying areas and facilities for washing cars, travel trailers, and camping equipment can be provided as an additional convenience to trailerists.

The owner or operator of a parking area should consider providing facilities for the storage of maintenance tools and the temporary storage of objects belonging to trailerists. For economy and ease of maintenance and use, storage facilities should be located near or in the service building or other park structures. The proper storage of tools and equipment is important in order to eliminate unsightliness, preserve equipment, and

decrease potential insect and rodent harborage.

Clothes drying areas, when provided, should be located near the service building and should preferably be screened from view of adjacent areas.

Facilities for washing cars and other equipment should be properly constructed and separated from adjacent areas by distances sufficient to minimize drainage problems or nuisances.

Preparation of Plans

Layout plans of the proposed travel trailer parking area should be prepared and submitted to health, zoning, and other responsible authorities for review and approval prior to construction. A description of the site location, with regard to highways and streets should accompany the layout plans.

The plans should show: (1) the area and dimensions of the site; (2) the number, location, and dimensions of all trailer spaces; (3) the location and width of roadways, automobile parking facilities, and walkways; (4) the location of service buildings, sanitary stations, and any other proposed structures; (5) plans and specifications of the water supply and refuse and sewage disposal facilities, including the location of water and sewer lines and riser pipes at the individual spaces; (6) plans and specifications of all buildings constructed or to be constructed within the travel trailer parking area; and (7) the location and details of lighting and electrical systems.

Depending on the extent of the facilities to be provided, additional plans may be required to show location of fire hydrants; plans and specifications of swimming pools and other special recreational facilities; special landscaping; fuel oil and LP-gas storage facilities; and details of service facilties such as car wash or clothes drying areas.

WATER SUPPLY

General

An adequate supply of water under pressure should be provided in every trailer trailer parking area to serve service buildings, watering stations, drinking fountains, individual water connections, fire hydrants, and other accessory facilities. The source and distribution system should be satisfactorily constructed and approved by the health authority.

Records should be kept of the location of water lines, valves, meters, connections, and other appurtenances to facilitate repairs or inspections when necessary.

Source of Supply

When feasible, water should be obtained from an approved public water supply system to obtain the advantages of qualified supervision which provides added assurance that the quality and quantity of water will be adequate at all times for domestic and firefighting purposes. Where public water supply systems are not available within a reasonable distance for extension to a travel trailer parking area, the best available source should be developed and constructed in accordance with plans approved by the health authority.

Wells should be properly constructed, the drilled or driven type being preferred. Wells and springs should be properly protected against any possible contamination and should be used only if they are determined to be bacteriologically safe and can be protected from sources of contamination. All surface water supplies, regardless of source, are subject to chance contamination and therefore require some form of treatment. The extent or degree of treatment needed is governed by the chemical and physical characteristics of the raw water and the extent of contamination or pollution that reaches the source intake.

Quality and Quantity of Source

An adequate and palatable supply of water, complying with applicable State or local requirements, or in the absence thereof, with the standards contained in the Public Health Service DRINKING WATER STANDARDS (see reference No. 3), should be provided in each travel trailer parking area. The source should be capable of supplying at least 50 gallons per space per day for all trailer spaces lacking individual water connections and 100 gallons per space per day for all trailer spaces provided with individual water connections.

Location and Development of Wells

Well sites should be at a point of high elevation and developed in such a manner that neither surface nor underground contamination may enter the water supply from any source, such as pit privies, subsurface pits, or septic tank systems. The danger of surface contamination should be minimized by sealing the annular space around the well casing to a depth of at least 10 feet, by

providing a 4 inch concrete slab around the top of the casing at least 2 feat in radius, and by installing a sanitary well seal over the casing.

Safe distances from sources of contamination depend upon such local factors as the level of the ground water table and the nature of underground rock formations.

The following minimum distances (see reference No. 4), are usually required between wells and contamination sources, however, local health department requirements should govern.

Contamination Sources	Well or suction line (distance in feet)
Building Sewer	50
Septic Tank	50
Disposal Field	100
Seepage Pit	100
Dry Well	50
Cesspool	150

If necessary, sewer system lines may be located as close as 10 feet to wells provided the sewers are of cast iron with leaded or mechanical joints.

The minimum depth at which water can be obtained varies with different soil formations and other local conditions. Preferably, water should not be drawn from wells with a depth of less than 20 feet, and in no case from a well of less than 10 feet in depth.

Distribution System

The water distribution system should be constructed of cast iron, wrought iron, copper, asbestos cement, or other material specifically approved for such use. All water piping, fixtures and other equipment should be constructed and maintained in accordance with State and local regulations.

Precautions should be taken in laying all water pipe. Except as permitted by State or local plumbing health codes, underground water service pipes and sewer lines should be at least 10 feet apart horizontally and separated by undisturbed or compacted earth. Water pipe should not be laid in water, nor where it can be flooded by water or sewage during the construction process. Dirt and other contaminating material should be excluded from the pipe. All water pipe should be disinfected after construction and before being placed into service.

An adequate flow pressure is necessary in the water supply system to assure a steady delivery and to minimize the hazard of back siphonage. The system should supply water at a flow pressure of at least 20 pounds per square inch at all service connections.

Watering Station

Each travel trailer parking area should be provided with easily accessible water supply outlets for filling trailer water storage tanks. A suggested ratio is one outlet per every 100 parking spaces or fraction thereof.

The watering station must be provided with: (1) a vacuum breaker or equivalent device to prevent back siphonage; (2) a shutoff valve for controlling the rate of flow; and (3) a flexible hose or other appurtenances necessary to reach the inlet of the trailer water storage tank. The ground surface around the water riser pipe should be sloped to drain spillage and surface water away from the riser. In addition, the watering station should be protected against freezing.

Individual Water Service Connections

If water service riser pipes are provided at individual trailer spaces, the riser pipes should consist of at least a ¾ inch diameter pipe, terminating at least 4 inches above the ground surface, and provided with a valved outlet. The outlet should be threaded so a screw connection can be made between the outlet and the trailer water system and the outlet should be plugged or capped when not in use. Suggested designs for a water riser pipe are shown in Figure 5. Flexible hosing is suggested for connecting the trailer to the riser pipe to facilitate making the shortest possible connection.

The riser pipe should be surrounded and supported by a sand backfill and the ground surface around the riser pipe should be graded so as to divert surface drainage away from the riser. A riser pipe location that conveniently serves most travel trailers is shown in Figure 6.

As shown in Figure 5, stop-and-waste valves cannot be utilized as shutoff valves because of the hazard of cross contamination. A stop-and-waste valve is defined as any unit that permits

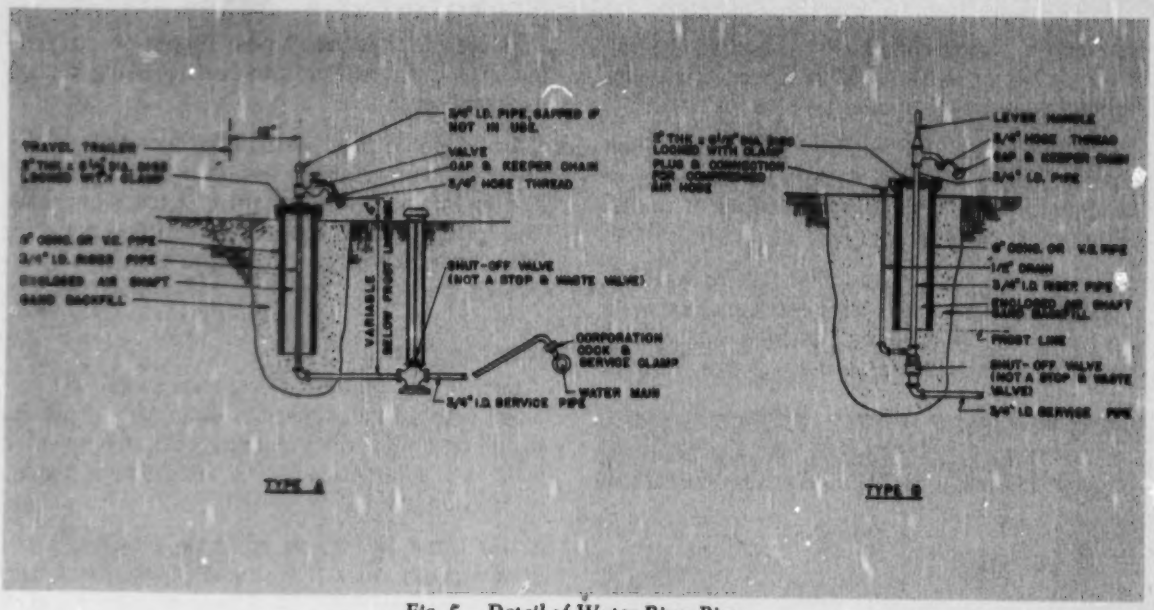


Fig. 5 Detail of Water Riser Pipe

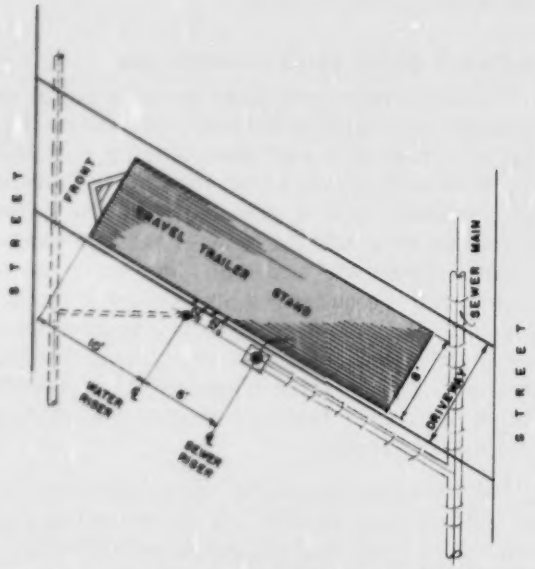


Fig. 6 Recommended Location of Water and Sewer Riser Pipes

the outlet side of the valve to be drained through a port or drain hole provided in the valve.

When not being used during freezing weather, water riser pipes should be drained to prevent possible damage. The Type A riser shown in Figure 5 can be drained by closing the shutoff valve, inserting a small diameter compressed air hose through the vertical extension at the top of the riser, and blowing the water up and out of the riser pipe. The Type B riser is drained by simply attaching a compressed air hose to the ½ inch drain line and blowing the water out the threaded outlet. Water riser pipes which are to be used during cold weather can be protected by using electrical heater tapes and insulation.

Water Storage Facilities

Water storage facilities must be provided when the water supply system cannot meet peak demands. If the rate of supply from a private well, public main, or other means of supply is not greater than or equal to the peak demand, storage facilities must be included in the distribution system.

Water storage can be provided by pressure tanks, elevated or ground-level storage tanks, and ground-level reservoirs. Pressure tanks should only be used to supply momentary peak demands since only 10 to 20 percent of the tank capacity is available as storage. After this reserve has been

used, the pressure tank no longer acts as a storage vessel and the rate of supply from the tank then depends on the delivery rate from the source and the adequacy of pumps and piping. Ground-level tanks and reservoirs, equipped with necessary pumps, are often used to supplement pressure tanks and to handle sustained maximum demands.

Storage facilities should be constructed of permanent, watertight material and should be covered. Overflow, blow-off, and clean-out pipes should be turned downward and covered with 24 inch mesh screen to prevent the entrance of contamination. Overflow lines should discharge through an air gap to prevent any back siphonage. Manholes should be fitted with raised, watertight walls, enclosed with a watertight, overlapping cover, and should be locked, or otherwise fastened, to prevent unauthorized access. Ground-level tanks and reservoirs should be located above ground water and flood levels, and in such a location that surface water and underground drainage flow away from the structure.

Pumping Equipment

No pumps, well casings, or suction lines should be located in any pit, room, or space extending below ground level, nor in any room or space above ground which is walled in or otherwise enclosed, unless it has free drainage by gravity to the surface of the ground. A sanitary seal should be provided on wells to seal the annular space between the drop pipe and the casing. Pump room floors should be impervious and should slope from the pump pedestal to the floor drain which should discharge through an acceptable air gap. The floor of pump rooms constructed above ground should be at least 6 inches above the outside ground surface, and the well casing should extend at least 6 inches above the pump room floor or platform slab.

Adequate precautions should be taken to insure the sanitary protection of both wells and pumping equipment as required by State or local codes. Additional information on protection procedures can be obtained from the Public Health Service Publication INDIVIDUAL WATER SUPPLY SYSTEMS (see reference No. 4).

Disinfection

Methods of disinfecting wells vary slightly depending on the type of well that is constructed. Generally, the procedure is to apply a 50 parts per million solution of chlorine to a developed well until a distinct chlorine odor is detectable in water pumped from the well, after which the solution is allowed to remain in the well for 24 hours. After 24 hours, the well should be pumped until the chlorine odor is no longer detectable. The water should be tested for its bacteriological quality after normal pumping operations are established but before being used for consumption. The water from the system should not be used for domestic or culinary purposes until reports on the bacteriological examination indicate that the water is safe for such use.

The water distribution system, including storage tanks and standpipes, should be disinfected in a similar manner. After construction or repairs, the system should be flushed out and disinfected with a 100 parts per million chlorine solution. The entire system should be filled with the chlorine solution, and all outlets should be opened until a strong chlorine odor is detectable in the water. All outlets then should be closed and the disinfecting solution should remain in the system for not less than 24 hours, after which the water in the system should be checked for chlorine residual and the system drained out. The process should be repeated if no chlorine residual is found. The system should be flushed with treated water before being placed into operation. If considered necassary, a bacteriological sample should be taken a few days later and tested to determine whether or not the water delivered by the system is free of contamination.

The water supply system provided for a travel trailer parking area should be inspected and approved by the health authority after construction and disinfection, and before it is placed into use. The recommendations of the State and local health authorities should be followed to assure the development of a safe and satisfactory supply.

Testing of Water Supply

In order to assure a safe and satisfactory water supply, samples of the water should be collected periodically and tested bacteriologically for organisms of the coliform group. If the water supply is obtained from a public system, the local health authority or an athorized agency should be responsible for testing the water. If the water supply is obtained from a private source, the health authority should be contacted for guidance in per-

iodic sampling of the water. A sampling frequency of at least once a month is recommended.

If bacteriological testing indicates continuous chlorination of the water supply is necessary, the chlorination procedures adopted should conform to all applicable regulations or to the requirements established by the health authority. Detailed and accurate records of the chlorination procedure should be maintained.

Drinking Fountains

Drinking fountains may be provided as necessary to meet the anticipated needs of the travel trailer parking area. If provided, drinking fountains should be properly located and constructed of impervious material and should have an angle jet with the nozzle above the overflow rim of the bowl. The nozzle should be protected by a non-oxidizing mouth guard. The bowl should be of easily cleanable design, without corners, and the bowl opening should have a strainer. The drain from the fountain should have no direct physical connection with a waste pipe, unless the drain is trapped. Drinking fountains should have a flow pressure of at least 15 pounds per square inch.

SEWAGE DISPOSAL

General

An adequate and safe sewerage system should be provided in all travel trailer parking areas for conveying and disposing of sewage from sanitary stations, service buildings and other accessory facilities. The sewerage system should be designed, constructed and maintained in accordance with all applicable regulations and the requirements of the health authority.

It is advisable to keep a record of the location and grade of sewers, the elevations of all important points such as inverts at manholes, and the exact positions of all wye branches or slants. Records are especially important if sewers are installed on a curved alignment.

Sewage Treatment

If possible, the sewerage system of a travel trailer parking area should be connected to a public sewerage system. If public sewers are not available within a reasonable distance of the parking area, adequate treatment facilities must be installed to dispose of the sewage. Where the sewerage system of the travel trailer parking area is not connected to a public sewer, any proposed sewage disposal facilities should be approved by the health authority prior to construction. The effluent from such treatment facilities should not be discharged into any body of water without prior approval.

The sewage treatment installation should be located where it will not create a health hazard or odor nuisance to the occupants of the travel trailer parking area nor to occupants of adjacent property. The topography of the area will often dictate the location of the treatment facilities since gravity drainage of the sewerage system is preferred. The State or local health authority can advise on the type of sewage treatment facilities which will be best suited to the location, considering the number of trailers to be served, soil conditions, topography, and other problems involved in sewage disposal. Such recommendations on the design and construction of the treatment facilities must be followed.

Sewerage Systems

Sewerage systems must have adequate capacity and be economical to construct, operate, and maintain. The design of sewerage and sewage treatment facilities for a travel trailer parking area should be based on the maximum number of trailer spaces to be provided and a sewage flow of at least 100 gallons per space per day for spaces with individual water and sewer connections and 50 gallons per space per day for spaces lacking individual water and sewer connections.

All sewer lines should be laid in trenches, separated at least 10 feet horizontally from any pressurized drinking water supply line, at a grade which will insure a mean velocity of 2 feet per second when the sewer is flowing full. All joints on the sewer line should be made watertight and every effort should be made to minimize groundwater infiltration into the sewerage system. All sewer connections and manholes should be so constructed as to prevent surface water from entering the sanitary sewers. Proper bedding and backfilling should be used on all sewer pipe to minimize maintenance problems and prolong the life of the sewerage system. A backfill of 12 inches of clean earth free from stones, cinderfill, or organic matter should be provided over all sewer lines.

Manholes should be provided at every change in direction or grade, at the upper end of every main sewer line, at every junction of two or more branch sewers and at intervals of not more than 400 feet. Clean-outs extending to grade may be used instead of manholes on sewer lines less than

8 inches in diameter. They should be provided where a manhole would otherwise be necessary and at intervals of not more than 100 feet. All cleanouts should be at least 4 inches in diameter and should be capped with clean-out plugs. A clearance of at least 18 inches over clean-outs is necessary for the purpose of rodding.

Sanitary Stations

Sanitary stations should be provided in each travel trailer parking area for the proper disposal of liquid wastes from the sewage holding tanks of trailers. At least one sanitary station should be provided for every 100 parking spaces or fractional part thereof.

A typical sanitary station is illustrated in Figures 7 and 8. The station utilizes a foot operated seal cover providing sanitary closure of the sewer pipe inlet when it is not in use. One end of a drain hose is connected to the holding tank of the

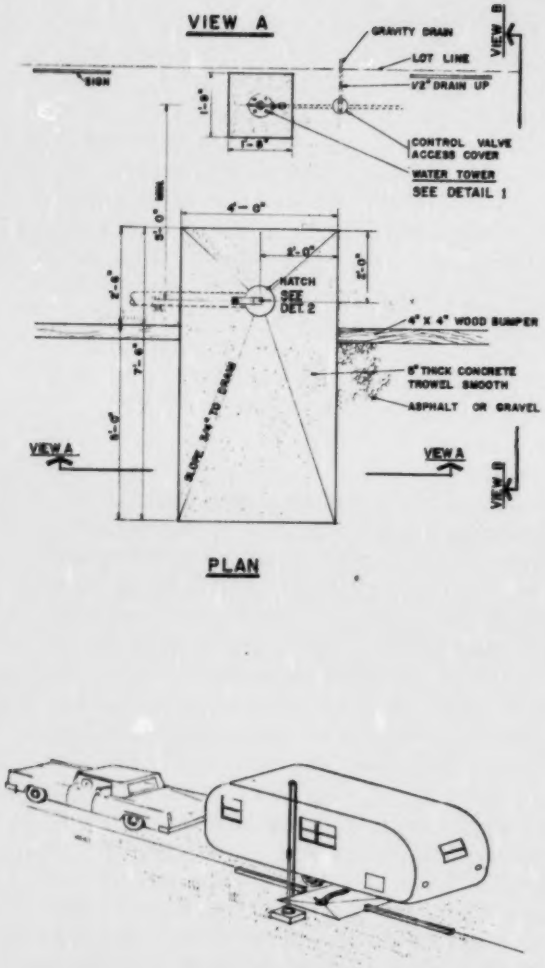


Fig. 7 Plan View of Sanitary Station

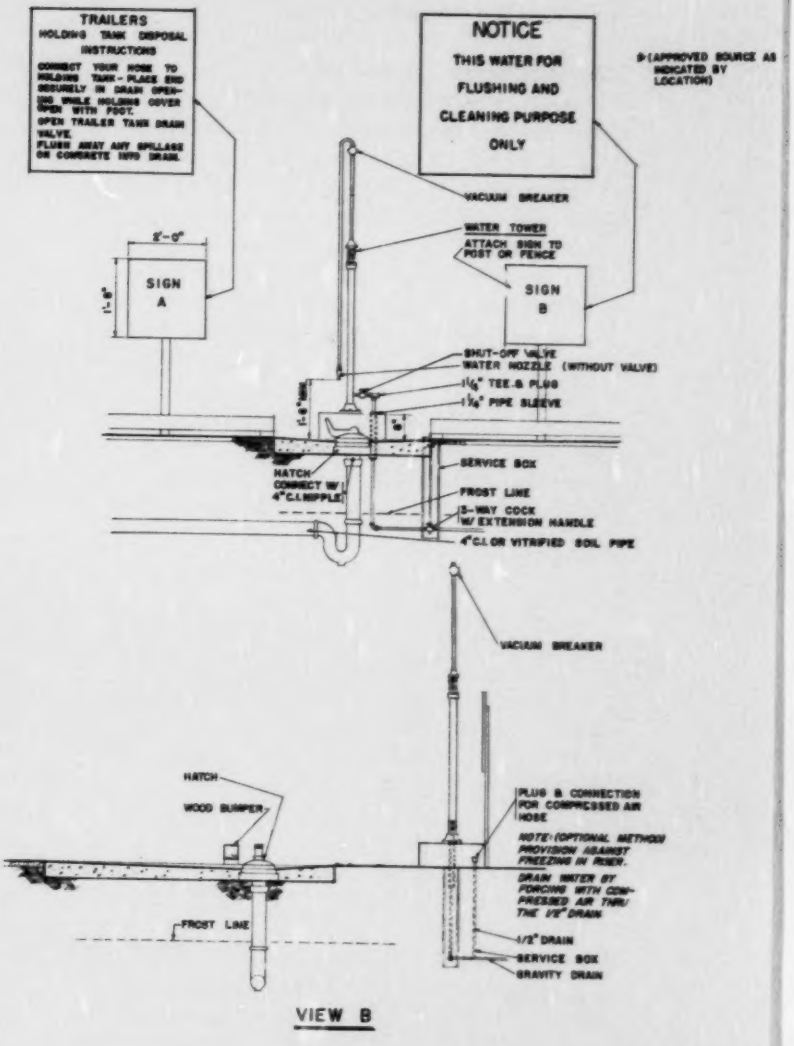


Fig. 8 Sectional Views of Sanitary Station

trailer with the free end placed securely in the drain opening while the cover is opened and the tank is allowed to empty. After using the facilities, any waste spilled around the drain opening should be washed into the drain with the wash-down water hose.

The sanitary station should be placed in a convenient and accessible location where it will not be a traffic hazard. It should be located at least 50 feet from any trailer space or building and screened from adjacent areas by fencing or vegetative growth.

If the sanitary station is to be available for use at night, sufficient lighting should be provided to illuminate the immediate area.

Individual Sewer Connections

If sewer connections are provided for individual trailer spaces, the sewer riser pipe should be at least 4 inches in diameter, be trapped below the ground surface, and be so located on the trailer space that the sewer connection is approximately vertical. The riser pipe should be provided with a wooden bumper guard, concrete collar, or other suitable arrangement to protect it from possible wheel damage. The recommended location of the riser pipe on the parking space is shown in Figure 6.

The connection between the trailer and sewer inlet should be watertight and self-draining. The connecting pipe should be noncollapsible, flexible, and at least 3 inches in diameter. A 3 to 4 inch adapter should be used to connect the 3 inch flexible tubing with the 4 inch riser pipe. An acceptable connection is illustrated in Figure 9. When the sewer connection is not in use, the bell of the riser pipe must be capped with an air-tight cap or plug. This is necessary to exclude rodents and other objects and prevent the escape of odors. All materials used for sewer connections should be corrosion resistant, nonabsorbent and durable, with a smooth inner surface.

Other types of sewer connections, such as those which utilize a screw type coupling to the riser pipe, are acceptable if they are watertight, air-tight, and otherwise equivalent to the recommended connection.

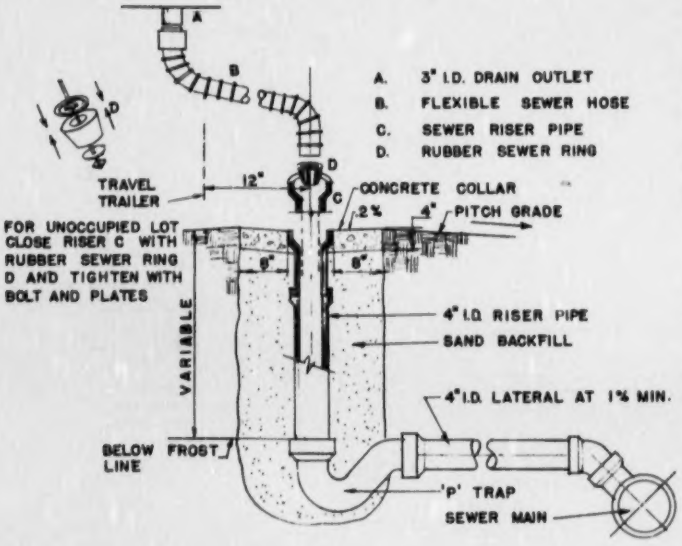


Fig. 9 Detail of Sewer Riser Pipe and Sewer Connection

Plumbing

All plumbing installed in travel trailer parking areas should be constructed, installed and maintained in accordance with applicable State and local regulations and requirements.

Specific attention should be given to the problem of cross connection and back siphonage. Any plumbing fixture in a travel trailer parking area which would permit a cross connection or backflow connection to be made should not be connected to the potable water system until the defect has been corrected.

All plumbing should be protected against freezing and sewers should be installed below the recorded frost penetration depth of the area.

Sink Wastes

Liquid wastes from kitchen sinks which are not connected to the main waste line of the trailer should not be discharged onto or allowed to accumulate on the ground surface. If possible, sink wastes should be discharged into the sewerage system through individual sewer connections or into the trailer sewage holding tank.

Where individual sewer connections are not available at the trailer space or adequate trailer sewage holding tanks are not provided, the sink wastes can be discharged into a suitable container which can then be emptied into a proper sewage disposal facility at the service building or sanitary station or the sink wastes can be discharged into a seepage pit. However, no other liquid wastes should be discharged into a seepage pit. Approval for a seepage pit installation should be obtained from the health authority as the use of seepage pits is affected by local soil factors and can contribute to water pollution problems.

SERVICE BUILDING

A central service building should be provided in travel trailer parking areas which provide parking spaces for dependent trailers. The service building should be located within 300 feet of the spaces it serves and it should contain necessary toilet and other plumbing fixtures specified below.

No. of Parking Spaces[a]	Toilets		Urinals	Lavatories		Showers		Other Fixtures[b]
	MEN	WOMEN	MEN	MEN	WOMEN	MEN	WOMEN	
1-15	1	1	1	1	1	1	1	1 Service sink with a flush rim[c]
16-30	1	2	1	2	2	1	1	
31-45	2	2	1	3	3	1	1	
46-60	2	3	2	3	3	2	2	
61-80	3	4	2	4	4	2	2	
81-100	3	4	2	4	4	3	3	

For parking areas having more than 100 trailer spaces there should be provided: 1 additional toilet and lavatory for each sex per each additional 30 trailer spaces; 1 additional shower for each sex per each additional 40 trailer spaces; and 1 additional men's urinal per each additional 100 trailer spaces.

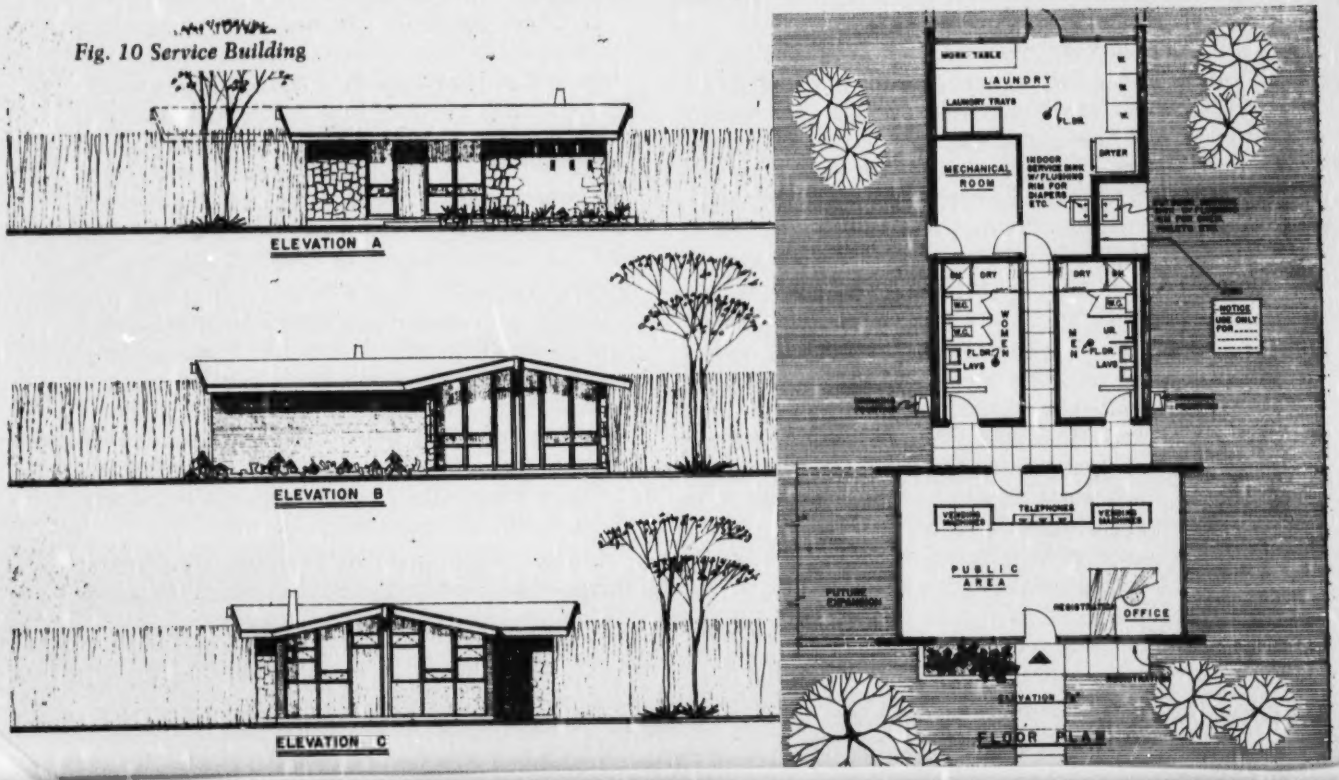
a Parking spaces for dependent trailers.
b Additional fixtures including laundry trays, clothes washing machine (one for every 30 sites) and an ice making machine may be desirable.
c A service sink with a flushing rim should be provided for disposal of liquid wastes.

Where a travel trailer parking area is designed for and exclusively limited to use by self-contained trailers, only minimum emergency sanitary facilities are necessary. In such a case, it is only necessary to provide one flush toilet and one lavatory for each sex per each 100 trailer spaces, or fractional part thereof.

If a travel trailer parking area is operated in connection with a resort or other business establishment, the number of sanitary facilities required for the resort or business establishment should be in excess of those required for the parking area and should be proportioned in ratio to the number of persons using the facilities.

A typical service building design is shown in Figure 10. The construction of the service build-

Fig. 10 Service Building



ing should conform to local building code requirements. The service building should be of permanent construction with a weather resistant exterior finish and an interior finish of moisture resistant material which will stand frequent washing and cleaning.

All rooms containing plumbing fixtures should have floors that are impervious to water, easily cleaned, and sloped to floor drains connected to the sewerage system. The floors and the plumbing fixtures should be maintained in a sanitary condition at all times by daily washing and disinfecting. Walls and partitions around showers, bath tubs, lavatories and other plumbing fixtures should be constructed of nonabsorbent, waterproof material or covered with moisture resistant material.

All rooms of a service building should be well ventilated and all exterior openings should be covered with a 16 mesh screen. Rooms containing sanitary or laundry facilities should be provided with at least one openable window or skylight facing directly outdoors or with a mechanical device which will adequately ventilate the room. The minimum total window area, measured between stops, should be 10 percent of the floor area of the room. When design permits, windows should be placed high in the wall and in more than one wall if possible.

The service building should have heating facilities capable of maintaining a temperature of 70° F and capable of heating sufficient hot water to adequately supply lavatory, bathing, and laundry fixtures.

Toilet and laundry rooms should be well lighted at all times since adequate lighting helps encourage cleanliness. The average illumination level for "general seeing tasks" in these rooms should be 5 footcandles. Since more exacting visual tasks require higher levels of illumination, laundry room work areas and toilet room mirrors should have average illumination levels of at least 40 footcandles. Daylight should be used to supplement lighting requirements whenever possible.

Separate men's and women's toilet rooms should be provided which are distinctly marked and separated by a sound resistant wall. A screen or wall should prevent direct view into toilet and shower compartments when the exterior doors are open. Each water closet and shower should be in a separate compartment, with self-closing doors on all water closet compartments. Shower stalls should be approximately 3 x 3 feet in area. Showers for women should have a dressing compartment with a stool or bench.

The owner or operator of a parking area should provide additional facilities in the service building in accordance with anticipated demand for such facilities. Laundry equipment, ice-making machines, and public telephones are extra conveniences which travel trailerists will appreciate.

REFUSE HANDLING

General

Public health problems are often associated with improper storage, collection, and disposal of refuse. There are significant relationships between the incidence of certain diseases in humans and animals and improper refuse handling. It is also common knowledge that many hazards and nuisances, such as fire, smoke, odors, and unsightliness, are created by poor refuse handling practices. Experience has shown that application of the basic principles of sanitation to refuse handling results in substantial reductions in insects, rodents, and related health problems.

Refuse

Generally, the refuse produced in any travel trailer parking area will be composed of garbage, ashes and rubbish. Garbage consists of food wastes; ashes are the residue from burned combustible materials; and rubbish includes paper, tin cans, bottles, garden trimmings, and other discards.

Garbage should be drained and wrapped in several thicknesses of newspapers by trailerists. This practice prevents fly production, keeps containers clean, reduces odor production, and prolongs the life of containers. When local regulations restrict the wrapping of garbage, extra care is necessary in storing. The area around containers should be kept free from waste material and the containers should be washed regularly to control odors and fly breeding.

Ashes will normally accumulate infrequently and in small quantities in travel trailer parking areas. The use of outdoor grills and the burning of leaves are the usual sources of ashes. Small quantities of ashes can best be disposed of by placing them in metal cans, strong cardboard boxes, or other suitable containers before placing them in refuse containers.

Bulky rubbish, such as tree and shrub trimmings, should be tied in bundles which are easy

to handle and small enough to load easily into the collection truck.

Containers

All refuse should be stored in durable, rust-resistant, nonabsorbent, watertight, and rodent proof containers that are covered with close fitting lids and provided with suitable handles. They should be maintained in a clean condition and kept in good repair. Sufficient capacity should be provided to prevent any container from overflowing between collections. Containers of about 30 gallon capacity are recommended to provide adequate capacity and yet be small enough for easy handling by collectors. Bulk containers can also be used in parking areas to reduce the amount of necessary refuse storage area.

Unless local collection regulations or disposal methods require the use of separate containers for garbage and rubbish, they may be stored in the same container. Combined refuse storage and collection is especially recommended when sanitary landfills are used as the means of final disposal.

The life of containers can be prolonged and the sanitary condition more easily maintained by lining them with a disposal paper or plastic bags as protection against excessive soiling and rusting. Spraying of suitable insecticides and sanitizing chemicals may be necessary in and around the containers to reduce odor and fly production during warm weather.

Container Storage

Refuse containers should be permanently located at points not more than 150 feet from any trailer space and easily accessible and convenient for use by trailerists. The use of racks or stands for container storage will help minimize spillage and container damage by traffic or deterioration. When set on stands, containers should have at least 12 inches of clear space beneath them to facilitate cleaning and prevent rodent harborage.

Special garbage handling procedures will be necessary at any food service establishments that might be located in the travel trailer parking area. All refuse containers should be kept on stands located on a concrete surface. Can washing facilities should be provided for the cleaning of cans after they are emptied. Such facilities should include a concrete slab with a slope adequate for draining the wash water to a sewer inlet.

Collection

All refuse which contains garbage should be collected at least twice weekly but daily collections are necessary from food service establishments. Frequent collection service requires less provision for storage capacity.

Where collection service is available from municipal or private agencies, their services should be utilized to insure regular removal of the refuse. In areas where refuse collection and disposal services are not available, the owner or operator of the parking area must provide this service. All refuse should be collected and transported in covered vehicles to prevent littering the parking area and the surrounding area.

Disposal

Where collection service is provided by a collection agency, either municipal or private, the owner or operator is not directly concerned with the method of disposal. In areas where municipal or private disposal service is not available, the owner or operator should dispose of the refuse by incineration, burial or transportation to a disposal site approved by the local authority.

There are a variety of small commercial incinerators available which can adequately dispose of the quantities of refuse usually accumulated in travel trailer parking areas. Contractors or manufacturers of such equipment will usually provide recommendations on the type and capacity of incinerator needed.

Incinerators must be properly designed and operated in order to reduce the refuse to an odorless gas and an inorganic ash. A minimum temperature of 1250° F must be maintained in incinerators to prevent nuisances, such as odors and dense smoke, from occurring. If garbage is to be burned, the incinerator may need to be equipped with an auxiliary fuel burner. Incinerators should be operated only when attended by some person responsible for the operation.

Refuse that is to be buried by the sanitary landfill method should be spread and compacted in layers not exceeding a depth of about 2 feet of compacted material and consecutive layers should not exceed a total depth of about 8 feet before being covered. A layer of at least 6 inches of compacted cover material should be placed on all exposed refuse at least daily and the final cover layer should be clean earth material compacted to a minimum depth of 2 feet.

INSECT AND RODENT CONTROL

General

The control of insects and rodents in travel trailer parking areas is necessary to protect the health and property of the trailerists. Insects and rodents are capable of transmitting diseases to man and other animals by bites or indirect contact and they are capable of causing property damage, including damage to vegetation, by gnawing or chewing.

Small localized infestations of insects or rodents can often be controlled by the owner or operator of the parking area. However, widespread infestations should be handled by a competent pest control operator, especially if large-scale chemical treatment procedures are to be used.

The best method of controlling insects and rodents in travel trailer parking areas is to use environmental sanitation procedures which eliminate food sources and places of harborage used by these pests. A proper environment will discourage the infestation and breeding of insects and rodents. The use of good environmental sanitation procedures will, in most instances, provide the most effective control and, over a period of years, it is more economical than repetitive chemical control measures which should be used only if adequate control cannot otherwise be maintained.

Proper precautions are always necessary when using pesticides to assure the safety of humans, domestic pets, and desirable wildlife. Many pesticides are potentially very hazardous and should be used only by trained pest control workers. Untrained persons using pesticides should use them only for small-scale treatments and any instructions for use on the labeling of the package should be followed carefully. Whenever large-scale applications of pesticides are to be made in travel trailer parking area, the health authority should be consulted to be sure proper methods and precautions are being exercised. If any doubt exists as to the safety, dosage, or method of application of any pesticide, the user should seek technical advice from a competent source.

Mosquito Control

Travel trailer parking areas should be kept free of cans, jars, buckets, old tires and other objects which may hold water and provide breeding places for mosquitoes. All depressions in which water may collect should be drained and filled to eliminate potential breeding areas. Any type of vegetation favoring mosquito production should be treated or removed.

For chemical treatment, No. 2 fuel oil, applied at a rate of about 15 to 50 gallons per acre is an effective larvicide for use in low, wet areas and on pools of standing water. In and around buildings, DDT will give good adulticidal action against nonresistant species when applied at a rate of 1 gallon of 5 percent spray per 1,000 square feet. Sprays containing dieldrin, BHC (benzine hexachloride), or malathion can be used against species resistant to DDT.

Fly Control

Attempts at chemical control of flies are seldom effective when not accompanied by proper environmental sanitation procedures. Flies should not be allowed access to organic matter such as garbage since they reproduce rapidly in this material. Garbage should be kept in proper containers provided with tight fitting lids. Garbage containers should be replaced or repaired when so damaged that their lids do not fit tightly enough to prevent the entrance of flies. All containers should be washed frequently and securely fastened on racks or stands to prevent overturning. The area around containers should not become littered with garbage nor saturated with liquid wastes from garbage. Droppings from dogs and other animals should be removed or covered with dirt or other suitable material.

Flies can be chemically controlled by using residual sprays. Pyrethrins (synergized) can be used as an indoor space spray. Emulsions or solutions of DDT (5 percent), dieldrin, or malathion can be used as residual sprays and emulsions of malathion or DDVP are effective larvicidal treatments.

Rodent Control

The most effective way to prevent or eliminate rodent infestation is to destroy places of harborage and remove food sources. Harborage places can be eliminated by the orderly stacking of such materials as lumber, pipe, or sheet metal at least 12 inches off the ground. Useless scrap material or rubbish should be promptly disposed. Storage, utility, and all other buildings should be rat proofed as much as possible.

In food storage areas, such as might be found in parking area snack bars or other food service

facilities, all food supplies should be stored with at least a 12 inch clear space beneath them. Periodic inspections should be made of food supplies to determine if rodents may have gained access to them.

Rodents can be controlled by trapping, the use of rodenticides, or both. Trapping has an advantage in that when the rodent is caught it can be removed from the premises without the odor problem that sometimes results when a poisoned animal dies in its place of harborage. Trapping is not effective as poisoning however. Anticogulant poisons such as Warfarin, Pival, Fumarin, Diphacinone, or PMP are effective against rodents when properly used. Single dose poisons such as red squill, arsenic trioxide, and zinc phosphide are also effective but they are more difficult and hazardous to use.

Roach Control

The best method of control of roaches is general cleanliness and tidyness. Food bits and crumbs should not be allowed to accumulate on floors, in cracks or crevices or in other places accessible to roaches. Rags, books, or other objects should not be stored in dark, damp places or stored in a disorderly manner.

Solutions or emulsions of chlordane, dieldrin, or malathion can be sprayed into cracks and crevices in walls, baseboards, furniture, fixtures, cabinets, along water pipes, and other places where roaches hide or travel. Finely powdered silica gel, chlordane dust, or malathion dust may be blown onto electrical wires or into fuse boxes and other places where sprays might cause damage. To obtain a quick kill in heavy infestation, or to drive the roaches from protected recesses, aerosol formulations of pyrethrum, alone or in combination with a residual treatment, are of value.

Fleas, Ticks, and Chiggers

Grass should be cut frequently and weeds should be eliminated in order to reduce food sources and places of harborage for these insects.

Flea control can be obtained by using a 5 to 10 percent DDT dust to treat the premises, particularly in places frequented by infected animals. If there is a definite resistance to DDT, a malathion dust may be used. Extra care should be taken when using insecticides around young animals to be sure they are not overexposed.

Area control of ticks can be obtained by the application of DDT, chlordane, dieldrin, or toxaphene at rates of 1 to 2 pounds of toxicant per acre, or BHC at a rate of 0.5 pound of the gamma isomer per acre.

Widespread infestations of chiggers (red bugs) can be controlled with spray or dust treatments of toxaphene or chlordane (1 to 2 pounds per acre), lindane (0.25 to 0.50 pounds per acre), or dieldrin (0.6 to 1.0 pounds per acre).

ELECTRICAL DISTRIBUTION

General

All electrical wiring, equipment and appurtenances should be installed and maintained in accordance with applicable codes and regulations. Where such codes or regulations do not exist, the provisions of the National Electrical Code (see reference No. 5) can be applied.

Distribution Lines

Preferably, distribution lines should be installed in underground conduits. Underground lines provide a much neater appearance and allow for more efficient use of available land than do overhead lines. Underground lines should be placed at least 18 inches below the ground surface and at least 1 foot radial distance from water, sewer, gas, or communication lines.

If overhead power lines are installed, they should be at least 18 feet above streets or roadways. A minimum horizontal clearance of at least 3 feet is necessary between overhead lines and any structure.

Individual Electrical Connections

If electrical supply facilities are to be provided for individual trailer spaces, they should consist of properly grounded weatherproof receptacles capable of supplying 15 and/or 30 ampere current at 120 volts. The attachment plug, connectors, and mating receptacles should be of a 2 pole, 3 wire type complying with AMERICAN STANDARD OUTLET RECEPTACLES, ATTACHMENT PLUG CAPS, AND APPLIANCE PLUGS, C 73.1-1961 (see reference No. 6). The supply cord used to connect outlet receptacles to trailers should be rated at 30 amperes.

Circuit breakers or other overcurrent protective devices and disconnecting switches should be provided in a convenient location for each trailer space to be served. The outlet receptacles should be within 25 feet of the overcurrent protective devices in the trailer.

Grounding

All exposed noncurrent carrying metal parts of trailers and equipment should be grounded by means of an approved grounding conductor run with branch circuit conductors or other approved method of grounded metallic wiring. The neutral conductor should not be used as an equipment ground for trailers or other equipment.

Exterior Lighting

Adequate lighting should be provided for all roads, walkways, buildings, sanitary stations, and other facilities subject to night-time use. Illumination should be provided in accordance with local requirements; where none exist, the recommendations in THE STANDARD LIGHTING GUIDE (see reference No. 7) of the Illuminating Engineering Society can be applied.

FUEL SUPPLY AND STORAGE

All handling and storage of liquified petroleum gas or other flammable liquids or gases should conform to all applicable regulations; where none exist, the standards of the National Board of Fire Underwriters and National Fire Protection Association (see references Nos. 8 and 9) can be applied.

Liquified petroleum gas containers can be installed on trailers to provide fuel service. They should be securely, but not permanently, fastened to prevent overturning. No LPG containers should be placed inside or beneath any trailer, or any other structure unless such arrangement is approved by the responsible authority.

Any fuel storage container located in an area subject to vehicular traffic should be properly protected against any possible damage.

FIRE PROTECTION AND SAFETY

General

Adequate fire protection should be provided in accordance with applicable State and local requirements; where non exist, current standards published by the National Fire Protection Association (see references Nos. 8 and 9) can be applied.

Fires should be allowed only in stoves, incinerators, and other equipment specifically designed for such purposes; open fires should never be permitted. Parking areas should be kept free of dry brush, weeds, and combustible refuse.

At least one portable fire appliance, such as Class A extinguishers (soda - acid, pump tank, anti-freeze), should be installed in service buildings and all other parking area buildings to fight fires in ordinary combustible materials. Where there is a danger of flammable liquid and electrical fires, Class B and Class C extinguishers should also be provided.

Heating Units

Fire and safety hazards have been associated with trailers containing heating equipment which is inadequately vented, often due to improper construction or installation. Such equipment presents not only the danger of fire but also the danger of asphyxiation from accumulation of gas fumes.

The owner or operator of the parking area should not permit trailerists to use heating or cooking equipment or systems that appear to be hazardous, such as the use of portable fuel-burning equipment in unvented, confined enclosures. To assure adequate safety, all equipment and systems should be constructed in accordance with AMERICAN STANDARD INSTALLATION OF PLUMBING, HEATING, AND ELECTRICAL SYSTEMS IN TRAVEL TRAILERS, A119.2-1963 (see reference No. 1).

MISCELLANEOUS REQUIREMENTS

Supervision

Every travel trailer parking area should be provided with adequate supervision to assure that the parking area and its facilities and equipment are maintained in good repair and operated in a clean and sanitary condition at all times. The owner and/or operator of the parking area should be held responsible for the violation of any State or local requirement pertaining to the operation or sanitary condition of the travel trailer parking area.

Registration

The operator of a parking area should maintain a register containing a record of all trailers and occupants permitted to use the parking area. The register should be available to any authorized person inspecting the travel trailer parking area and should be preserved for a period designated by the health authority. The register should contain: (1) the names and addresses of the trailer owner and all occupants; (2) the make, model, and license number of the tow vehicle and trailer; and (3) the dates of arrival and departure of each trailer.

Communicable Disease Control

The owner or operator of a travel trailer parking area must notify the health authority immediately of any known or suspected case of a communicable disease. In the case of diseases that are diagnosed by a physician as quarantinable, the trailer and its occupants should not be allowed to depart from the travel trailer parking area and clothing or other articles that have been exposed to the infection should not be removed, without the approval of the health authority.

Pets

No dogs, cats, or other domestic animals should be permitted unrestricted freedom in a parking area. Any kennels, pens, or other facilities provided for such pets should be maintained in a sanitary condition at all times.

Commercial Operations

Any commercial operation, such as an automobile service station or a restaurant, allowed to operate in conjunction with a travel trailer parking area should be so located and operated that it will not interfere with the normal operation of the parking area. Commercial buildings should be constructed in accordance with State and local regulations.

Any restaurant, dining room, or other food service facility should be constructed and operated in accordance with all State and local laws and regulations applicable to food service establishment. Where local regulations do not exist, the provisions set forth in the Public Health Service FOOD SERVICE SANITATION MANUAL (see reference No. 10) should be followed.

Travel Trailer Rallies

When planning a travel trailer rally, the local health authority should be consulted to determine the minimum temporary sanitary facilities and procedures that will be necessary to protect the health of the trailerists. Since rallies are only temporary gatherings of trailers, seldom lasting more than a few days, permanent sanitary facilities are not necessary. Rallies should be limited to not more than 10 days duration at one site to minimize the potential occurrence of unsanitary conditions.

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APPENDIX

RECOMMENDED ORDINANCE GOVERNING TRAVEL TRAILER PARKING AREAS

(TITLE: the following is a suggested title; the actual title should conform to local requirements.)

AN ORDINANCE enforcing MINIMUM STANDARDS for travel trailer parking areas; establishing requirements for the design, construction, alteration, extension and maintenance of travel trailer parking areas and related utilities and facilities; authorizing the issuance of permits for construction, alteration and extension of travel trailer parking areas; authorizing the licensing of operators of travel trailer parking areas; authorizing the inspection of travel trailing parking areas; and fixing penalties for violations.

Be it, therefore, ordained by the (name of municipality) as follows:

SECTION 1: DEFINITIONS

As used in this ordinance:

a. HEALTH AUTHORITY means the legally designated health authority or its authorized representative of (name of municipality).

b. LICENSE means a written license issued by the health authority allowing a person to operate and maintain a travel trailer parking area under the provisions of this Ordinance and regulations issued hereunder.

c. PERMIT means a written permit issued by the health authority permitting the construction, alteration and extension of a travel trailer parking area under the provisions of this Ordinance and regulations issued hereunder.

d. PERSON means any individual, firm, trust, partnership, public or private association or corporation.

e. SANITARY STATION means a facility used for removing and disposing of wastes from trailer holding tanks.

f. SERVICE BUILDING means a structure housing toilet, lavatory and such other facilities as may be required by this Ordinance.

g. SERVICE SINK means a slop sink with a flushing rim for the disposal of liquid wastes from trailers.

h. SEWER CONNECTION means the connection consisting of all pipes, fittings and appurtenances from the drain outlet of the trailer to the inlet of the corresponding sewer riser pipe of the sewerage system serving the travel trailer parking area.

i. SEWER RISER PIPE means that portion of the sewer lateral which extends vertically to the ground elevation and terminates at each trailer space.

j. TRAILER means any of the following:

1) TRAVEL TRAILER means a vehicular, portable structure built on a chassis, designed to be used as a temporary dwelling for travel, recreational and vacation uses, permanently identified Travel Trailer by the manufacturer of the trailer and, when factory equipped for the road, it shall have a body width not exceeding eight feet, and a body length not exceeding 32 feet.

2) PICK-UP COACH means a structure designed to be mounted on a truck chassis for use as a temporary dwelling for travel, recreation and vacation.

3) MOTOR-HOME means a portable, temporary dwelling to be used for travel, recreation and vacation, constructed as an integral part of a self-propelled vehicle.

4) CAMPING TRAILER means a canvas, folding structure, mounted on wheels and designed for travel, recreation and vacation use.

k. DEPENDENT TRAILER means a trailer which is dependent upon a service building for toilet and lavatory facilities.

l. SELF-CONTAINED TRAILER means a trailer which can operate independent of connections to sewer, water and electric systems. It contains a water-flushed toilet, lavatory, shower and kitchen sink, all of which are connected to water storage and sewage holding tanks located within the trailer.

m. TRAVEL TRAILER PARKING AREA means a parcel of land in which two or more spaces are occupied or intended for occupancy by trailers for transient dwelling purposes.

n. TRAILER SPACE means a parcel of land in a travel trailer parking area for the placement of a single trailer and the exclusive use of its occupants.

o. TRAILER STAND means that part of an individual trailer space which has been reserved for the placement of a single trailer and its accessory structures.

p. WATER CONNECTION means the connection consisting of all pipes, fittings and appurtenances from the water riser pipe to the water inlet pipe of the distribution system within the trailer.

q. WATER RISER PIPE means that portion of the water supply system serving the travel trailer parking area which extends vertically to the ground elevation and terminates at a designated point at each trailer space.

r. WATERING STATION means a facility for supplying water storage tanks of trailers with potable water.

SECTION 2: PERMITS

2.1

It shall be unlawful for any person to construct, alter or extend any travel trailer parking area within the limits of (name of municipality) unless he holds a valid permit issued by the health authority in the name of such person for the specific construction, alteration or extension proposed.

2.2

All applications for permits shall be made to the health authority and shall contain the following:

2.3

(a) Name and address of applicant.
(b) Interest of the applicant in the travel trailer parking area.
(c) Location and legal description of the travel trailer parking area.
(d) Complete engineering plans and specifications of the proposed parking area showing:
    1. The area and dimensions of the tract of land;
    2. The number, location, and size of all trailer spaces;
    3. The location and width of roadways and walkways;
    4. The location of service buildings, sanitary stations, and any other proposed structures;
    5. The location of water and sewer lines and riser pipes;
    6. Plans and specifications of the water supply and refuse and sewage disposal facilities;
    7. Plans and specifications of all buildings constructed or to be constructed within the travel trailer parking area; and
    8. The location and details of lighting and electrical systems.

2.3

All applications shall be accompanied by the deposit of a fee of .....dollars.

2.4

When, upon review of the application, the health authority is satisfied that the proposed plan meets the requirements of this Ordinance and regulations issued hereunder, a permit shall be issued.

2.5

Any person whose application for a permit under this Ordinance has been denied may request and shall be granted a hearing on the matter before the health authority under the procedure provided by Section 5 of this Ordinance.

SECTION 3: LICENSES

3.1

It shall be unlawful for any person to operate any travel trailer parking area within the limits of (name of municipality) unless he holds a valid license issued annually by the health authority in the name of such a person for the specific travel trailer parking area. All applications for licenses shall be made to the health authority, who shall issue a license upon compliance by the applicant with provisions of this Ordinance and regulations issued hereunder and of other applicable legal requirements.

3.2

Every person holding a license shall give notice in writing to the health authority within twenty-four hours after having sold, transferred, given away or otherwise disposed of interest in or control of any travel trailer parking area. Such notice shall include the name and address of the person succeeding to the ownership or control of such travel trailer parking area. Upon application in writing for transfer of the license and deposit of a fee of ..... dollars, the license shall be transferred if the parking area is in compliance with all applicable provisions of this Ordinance and regulations issued hereunder.

3.3

(a) Application for original licenses shall be in writing, signed by the applicant, accompanied by an affidavit of the applicant as to the truth of the application and by the deposit of a fee of .....dollars, and shall contain: the name and address of the applicant; the location and legal description of the travel trailer parking area; and a site plan of the travel trailer parking area showing all trailer spaces, structures, roads, walkways, sanitary stations, and other service facilities.
(b) Applications for renewals of licenses shall be made in writing by the holders of the licenses, shall be accompanied by the deposit of a fee of .....dollars, and shall contain any change in the information submitted since the original license was issued or the latest renewal granted.

3.4

Any person whose application for a license under this Ordinance has been denied may request and shall be granted a hearing on the matter before the health authority under the procedure provided by Section 5 of this Ordinance.

3.5

Whenever, upon inspection of any travel trailer parking area, the health authority finds that conditions or practices exist which are in violation of any provision of this Ordinance or regulations issued hereunder, the health authority shall give notice in writing in accordance with Section 5.1 to the person to whom the license was issued that unless such conditions or practices are corrected within a reasonable period of time specified in the notice by the health authority, the license will be suspended. At the end of such period, the health authority shall reinspect such travel trailer parking area and, if such conditions or practices have not been corrected, he shall suspend the license and give notice in writing of such suspension to the person to whom the license is issued. Upon receipt of notice of suspension, such person shall cease operation of such travel trailer parking area except as provided in Section 5.2.

3.6

Any person whose license has been suspended, or who has received notice from the health authority that his license will be suspended unless certain conditions or practices at the travel trailer parking area are corrected, may request and shall be granted a hearing on the matter before the health authority, under the procedure provided by Section 5 of this Ordinance; provided that when no petition for such hearing shall have been filed within ten days follow-

ing the day on which notice of suspension was served, such license shall be deemed to have been autotomatically revoked at the expiration of such ten-day period.

3.7

A temporary license, upon written request therefor, shall be issued by the health authority, for every travel trailer parking area in existence upon the effective date of this Ordinance, permitting the travel trailer parking area to be operated during the period ending 180 days after the effective date of this ordinance in accordance with such conditions as the health authority may require.

3.8

The term of the temporary license shall be extended, upon written request, for not to exceed one additional period of 180 days, if (1) the licensee shall have filed application for a license in conformity with Section 3.3 of this Ordinance within 90 days after the effective date of this Ordinance, (2) the plans and specifications accompanying the application for license comply with all provisions of this Ordinance and all other applicable ordinances and statutes, (3) the licensee shall have diligently endeavored to make the existing travel trailer parking area conform fully to the plans and specifications submitted with application, and (4) failure to make the existing travel trailer parking area conform fully to such plans and specifications shall have been due to causes beyond the control of the licensee.

SECTION 4: INSPECTION OF TRAVEL TRAILER PARKING AREAS

4.1

The health authority is hereby authorized and directed to make such inspections as are necessary to determine satisfactory compliance with this Ordinance and regulations issued hereunder.

4.2

The health authority shall have the power to enter at reasonable times upon any private or public property for the purpose of inspecting and investigating conditions relating to the enforcement of this Ordinance and regulations issued hereunder.

4.3

The health authority shall have the power to inspect the register containing a record of all travel trailers and occupants using the travel trailer parking area.

4.4

It shall be the duty of the owners or occupants of travel trailer parking areas, and trailers contained therein, or of the person in charge thereof, to give the health authority free access to such premises at reasonable times for the purpose of inspection.

4.5

It shall be the duty of every occupant of a travel trailer parking area to give the owner thereof or his agent or employees access to any part of such travel trailer parking area or its premises at reasonable times for the purpose of making such repairs or alterations as are necessary to effect compliance with this Ordinance and regulations issued hereunder, or with any lawful order issued pursuant to the provisions of this Ordinance.

SECTION 5: NOTICES, HEARINGS AND ORDERS

5.1

Whenever the health authority determines that there are reasonable grounds to believe that there has been a violation of any provision of this Ordinance, or regulations issued hereunder, the health authority shall give notice of such alleged violation to the person to whom the permit or license was issued, as hereinafter provided. Such notice shall (a) be in writing; (b) include a statement of the reasons for its issuance; (c) allow a reasonable time for the performance of any act it requires; (d) be served upon the owner or his agent as the case may require: Provided: That such notice or order shall be deemed to have been properly served upon such owner or agent when a copy thereof has been sent by registered mail to his last known address; or when he has been served with such notice by any other method authorized or required by the laws of this state; (e) contain an outline or remedial action, which, if taken, will effect compliance with the provisions of this Ordinance and regulations issued hereunder.

5.2

Any person affected by any notice which has been issued in connection with the enforcement of any provision of this Ordinance, or regulation issued hereunder, may request and shall be granted a hearing on the matter before the health authority: Provided: That such person shall file in the office of the health authority a written petition requesting such hearing and setting forth a brief statement of the grounds therefor within ten days after the day the notice was served. The filing of the request for a hearing shall operate as a stay of the notice and of the suspension except in the case of an order issued under Section 5.5. Upon receipt of such petition, the health authority shall set a time and place for such hearing, and shall give the petitioner written notice thereof. At such hearing, the petitioner shall be given an opportunity to be heard, and to show why such notice should be modified or withdrawn. The hearing shall be commenced not later than ten days after the day on which the petition was filed: Provided: That upon application of the petitioner, the health authority may postpone the date of the hearing for a reasonable time beyond such ten-day period when in his judgment the petitioner has submitted good and sufficient reasons for such postponement.

5.3

After such hearing, the health authority shall make findings as to compliance with the provisions of this Ordinance and regulations issued hereunder and shall issue an order in writing sustaining, modifying or withdrawing the notice which shall be served as provided in Section 5.1(d). Upon failure to comply with any order sustaining or modifying a notice, the permit or license of the travel trailer parking area affected by the order shall be revoked.

5.4

The proceedings at such a hearing, including the findings and decision of the health authority, and together with a copy of every notice and order related thereto shall be entered as a matter of public record in the office of the health authority but the transcript of the proceedings need not be transcribed unless judicial review of the decision is sought as provided by this Section. Any person aggrieved by the decision of the health authority may seek relief therefrom in any court of competent jurisdiction, as provided by the laws of this state.

5.5

Whenever the health authority finds that an emergency exists which requires immediate action to protect the public health, he may, without notice or hearing, issue an order reciting the existence of such an emergency and requiring that such action be taken as he may deem necessary to meet the emergency including the suspension of the permit or license. Notwithstanding any other provisions of this Ordinance, such order shall be effective immediately. Any person to whom such an order is directed shall comply therewith immediately, but upon petition to the health authority, shall be afforded a hearing as soon as possible. The provisions of Section 5.3 and 5.4 shall be applicable to such hearing and the order issued thereafter.

SECTION 6: ADOPTION OF REGULATIONS BY THE HEALTH AUTHORITY

6.1

The health authority is hereby authorized to make, and, after public hearing, to adopt such written regulations as may be necessary for the proper enforcement of the provisions of this Ordinance. Such regulations shall have the same force and effect as the provisions of this Ordinance, and the penalty for violation of the provisions thereof shall be the same as the penalty for violation of the provisions of this Ordinance, as hereinafter provided.

SECTION 7: ENVIRONMENTAL, OPEN SPACE AND ACCESS REQUIREMENTS

7.1

General Requirements

Condition of soil, groundwater level, drainage and topography shall not create hazards to the property or the health or safety of the occupants. The site shall not be exposed to objectionable smoke, noise, odors or other adverse influences, and no portion subject to unpredictable and/or sudden flooding, subsidence or erosion shall be used for any purpose which would expose persons or property to hazards.

7.2

Soil and Ground Cover Requirements

Exposed ground surfaces in all parts of every parking area shall be paved, or covered with stone screenings, or other solid material, or protected with a vegetative growth that is capable of preventing soil erosion and of eliminating objectionable dust.

7.3

Required Separation Between Trailers

Trailers shall be separated from each other and from other structures by at least 10 feet. Any accessory structure such as attached awnings, carports, or individual storage facilities shall, for purposes of this separation requirement, be considered to be part of the trailer.

7.4

Density Requirement

The density shall not exceed 25 trailer spaces per acre of gross site area except that the health authority may, under special circumstances, permit a higher density provided all other environmental, open space, and access requirements of this Ordinance and regulations issued hereunder are adhered to. Any person desiring a higher density shall make application for such exemption to the health authority, specifying the reasons therefor. If a higher density is permitted, the health authority shall issue a special license specifying the location of the parking area, the expiration date of the license, and the conditions of issuance.

7.5

Required Recreation Area

In all travel trailer parking areas there shall be at least one recreation area which shall be easily accessible from all trailer spaces. The size of such recreation area shall be not less than eight percent of the gross site area or 2,500 square feet, whichever is greater.

7.6

Required Setbacks from Public Streets

All trailers shall be located at least 25 feet from any parking area boundary line abutting upon a public street or highway.

7.7

Park Street System

(a) GENERAL REQUIREMENTS: All parking areas shall be provided with safe and convenient vehicular access from abutting public streets or roads to each trailer space. Alignment and gradient shall be properly adapted to topography. Surfacing and maintenance shall provide a smooth, hard and dense surface which shall be well drained.

(b) ACCESS: Access to travel trailer parking areas shall be designed to minimize congestion and hazards at their entrance or exit and allow free movement of traffic on adjacent streets. All traffic into or out of the parking areas shall be through such entrances and exits.

(c) INTERNAL STREETS: Surfaced roadways shall be of adequate width to accommodate anticipated traffic and in any case shall meet the following minimum requirements:

One-way, no parking .....11 feet
(Acceptable only if less than 500 feet total length and serving less than 25 trailer spaces.)
One-way, parking on one side only, or
Two-way, no parking .....18 feet
(Acceptable only if serving less than 50 trailer spaces.)

Two-way, no parking .....24 feet
Two-way, parking on one side only ....27 feet
Two-way, parking on both sides .....34 feet

(d) OFF-STREET PARKING AND MANEUVERING SPACE: Each travel trailer parking area shall provide sufficient parking and maneuvering space so that the parking, loading or maneuvering of trailers incidental to parking shall not necessitate the use of any public street, sidewalk or right-of-way or any private grounds not part of the travel trailer parking area.

SECTION 8: WATER SUPPLY

8.1
General Requirements

An accesible, adequate, safe, and potable supply of water shall be provided in each travel trailer parking area. Where a public suply of water of satisfactory quantity, quality, and pressure is available, connection shall be made thereto and its supply used exclusively. When a satisfactory public water supply is not available, a private water supply system may be developed and used as approved by the health authority.

8.2
Source of Supply

(a) The water supply shall be capable of supplying 50 gallons per space per day for all spaces lacking individual water connections and 100 gallons per space per day for all spaces provided with individual water connections.

(b) Every well or suction line of the water supply system shall be located and constructed in such a manner that neither underground nor surface contamination will reach the water supply from any source. The following minimum distances between wells and various sources of contamination shall be required.

Contamination Sources	Well or Suction Line (Distance in Feet)
Building Sewer	50
Septic Tank	50
Disposal Field	100
Seepage Pit	100
Dry Well	50
Cesspool	150

(c) No well-casings, pumps, pumping machinery or suction pipes shall be placed in any pit, room or space extending below ground level nor in any room or space above ground which is walled in or otherwise enclosed, unless such rooms, whether above or below ground, have free drainage by gravity to the surface of the ground.

(d) The treatment of a private water supply shall be in accordance with applicable laws and regulations.

8.3
Water Storage Facilities

All water storage reservoirs shall be covered, watertight and constructed of impervious material. Overflows and vents of such reservoirs shall be effectively screened. Manholes shall be constructed with overlapping covers, so as to prevent the entrance of contaminated material. Reservoir overflow pipes shall discharge through an acceptable air gap.

8.4
Water Distribution System

(a) The water supply system of the travel trailer parking area shall be connected by pipes to all buildings and other facilities requiring water.

(b) All water piping, fixtures and other equipment shall be constructed and maintained in accordance with state and local regulations and requirements and shall be of a type and in locations approved by the health authority.

(c) The water piping system shall not be connected with nonpotable or questionable water supplies and shall be protected against the hazards of backflow or back siphonage.

(d) The system shall be so designed and maintained as to provide a pressure of not less than 20 pounds per square inch, under normal operating conditions, at service buildings and other locations requiring potable water supply.

8.5
Watering Stations

Each travel trailer parking area shall be provided with one or more easily accessible water supply outlets for filling trailer water storage tanks. Such water supply outlets shall consist of at least a water hydrant and the necessary appurtenances and shall be protected against the hazards of backflow and back siphonage.

8.6
Individual Water Connections

If facilities for individual water service connections are provided, the following requirements shall apply:

(a) Riser pipes provided for individual water-service connections shall be so located and constructed that they will not be damaged by the parking of travel trailers.

(b) Water riser pipes shall extend at least four inches above ground elevation. The pipe size shall be three-quarter inch.

(c) Adequate provisions shall be made to prevent freezing of service lines, valves and riser pipes.

(d) Underground stop and waste valves shall not be installed on any water service.

(e) Valves shall be provided near the outlet of each water service connection. They shall be turned off and the outlets capped or plugged when not in use.

SECTION 9: SEWAGE DISPOSAL

9.1
General Requirements

An adequate and safe sewerage system shall be provided in all travel trailer parking areas for conveying and disposing of all sewage. Such system shall be designed, constructed and maintained in accordance with state and local laws.

9.2
Sanitary Stations

(a) A sanitary station shall be provided consisting of at least: a trapped four inch sewer riser pipe, connected to the travel trailer parking area sewerage system, surrounded at the inlet end by a concrete apron sloped to the drain, and provided with a suitable hinged cover; and a water outlet, witth the necessary appurtenances, connected to the parking area water supply system to permit periodic washdown of the immediate adjacent areas.

(b) Each travel trailer parking area shall be provided with a sanitary station in the ratio of one for every 100 trailer spaces or fractional part thereof.

(c) Sanitary stations shall be screened from other activities by visual barriers such as fences, walls or natural growth and shall be separated from any trailer space by a distance of at least 50 feet.

9.3
Sewer Lines

All sewer lines shall be located in trenches of sufficient depth to be free of breakage from traffic or other movements and shall be separated from the water supply system at a safe distance. Sewers shall be at a grade which will insure a velocity of two feet per second when flowing full. All sewer lines shall be constructed of materials approved by the health authority, shall be adequately vented and shall have watertight joints.

9.4
Individual Sewer Connections

If facilities for individual sewer connections are provided, the following requirements shall apply:

(a) The sewer riser pipe shall have at least a four inch diameter, shall be trapped below the ground surface and shall be so located on the trailer space that the sewer connection to the trailer drain outlet will approximate a vertical position.

(b) The sewer connection (see definition) shall have a nominal inside diameter of at least three inches, and the slope of any portion thereof shall be at least one-fourth inch per foot. The sewer connection shall consist of one pipe line only without any branch fittings. All joints shall be watertight.

(c) All materials used for sewer connections shall be corrosive resistant, nonabsorbent and durable. The inner surface shall be smooth.

(d) Provision shall be made for plugging the sewer riser pipe when a trailer does not occupy the space. Surface drainage shall be diverted away from the riser.

9.5
Sink Wastes

No liquid wastes from sinks shall be charged onto or allowed to accumulate on the ground surface.

9.6
Sewage Treatment and/or Discharge

Where the sewer lines of the travel trailer parking area are not connected to a public sewer, all proposed sewage disposal facilities shall be approved by the health authority prior to construction. Effluents from sewage treatment facilities shall not be discharged into any waters of the state except with prior approval of the health authority.

SECTION 10: ELECTRICAL DISTRIBUTION SYSTEM

10.1
General Requirements

If an electrical wiring system is provided, it shall consist of approved fixtures, equipment and appurtenances, which shall be installed and maintained in accordance with applicable codes and regulations governing sych systems.

10.2
Power Distribution Lines

(a) Main power lines not located underground shall be suspended at least 18 feet above the ground. There shall be a minimum horizontal clearance of three feet between overhead wiring and any trailer, service building or other structure.

(b) All direct burial conductors or cables shall be buried at least 18 inches below the ground surface and shall be insulated and specially approved for the purpose. Such conductors shall be located not less than one foot radial distance from water, sewer, gas or communication lines.

10.3
Individual Electrical Connections

(a) If individual trailer spaces are connected to the electrical wiring system, an approved type of disconnecting device and overcurrent protective equipment shall be provided. The service per outlet shall be 120 volts AC, 15 amperes and/or 30 amperes.

(b) Outlet receptacles at individual trailer spaces shall be located not more than 25 feet from the overcurrent protective devices in the trailer and a three wire grounding type shall be used. Receptacles shall be of weather proof construction and configurations shall be in accordance with American Standard Outlet Receptacle C-73.1.

(c) The trailer shall be connected to the outlet receptacle by an approved type of flexible cable with connectors and a male attachment plug.

10.4
Required Grounding

All exposed noncurrent carrying metal parts of trailers and all other equipment shall be grounded by means of a grounding conductor run with branch circuit conductors or other method of approved grounded metallic wiring. The neutral conductor shall not be used as an equipment ground for trailers or other equipment.

SECTION 11: SERVICE BUILDINGS AND OTHER SERVICE FACILITIES

11.1
General

The requirements of this Section shall apply to

service buildings, recreation buildings and other service facilities such as:

(a) Management offices, repair shops and storage areas;

(b) Sanitary facilities;

(c) Laundry facilities;

(d) Indoor recreation areas;

(e) Commercial uses supplying essential goods or services for the exclusive use of trailer occupants.

11.2
Service Building

(a) A central service building containing the necessary toilet and other plumbing fixtures specified shall be provided in travel trailer parking areas which provide parking spaces for dependent trailers. Service buildings shall be conveniently located within a radius of approximately 300 feet to the spaces to be served.

No. of Parking Spaces[a]	Toilets		Urinals,	Lavatories		Showers		Other
	MEN	WOMEN	MEN	MEN	WOMEN	MEN	WOMEN	Fixtures[b]
1-15	1	1	1	1	1	1	1	1 Service sink with a flushing rim[c]
16-30	1	2	1	2	2	1	1	
31-45	2	2	1	3	3	1	1	
46-60	2	3	2	3	3	2	2	
61-80	3	4	2	4	4	2	2	
81-100	3	4	2	4	4	3	3	

For parking areas having more than 100 travel trailer spaces there shall be provided: 1 additional toilet and lavatory for each sex per each additional 30 travel trailer spaces; 1 additional shower for each sex per each additional 40 travel trailer spaces; and 1 additional men's urinal per each additional 100 travel trailer spaces.

[a] Parking spaces for dependent trailers.

[b] Additional fixtures including laundry trays, clothes washing machines (one for every 30 sites) and an ice making machine may be provided.

[c] A service sink with a flushing rim shall be provided for disposal of liquid wastes unless a sanitary station is conveniently accessible for this purpose.

(b) Where a travel trailer parking area is designed for and exclusively *limited to use by self-contained* trailers, only the following minimum emergency sanitary facilities shall be required: for each 100 trailer spaces, or fractional part thereof, there shall be one flush toilet and one lavatory for each sex.

(c) When a travel trailer parking area requiring a service building is operated in connection with a resort or other business establishment, the number of sanitary facilities for such business establishment shall be in excess of those required by the schedule for trailer spaces and shall be based on the total number of persons using such facilities.

(d) EXEMPTIONS

Any person desiring to furnish temporary facilities for accommodating a travel trailer rally, or other group of trailers assembled for the purpose of traveling together, shall make application for such activity to the health authority. The requirements for a service building and other sanitary and physical facilities may be waived by the health authority on the determination that public health will not be endangered; but the location of the site, the facilities which are provided, and the method of conducting such rally shall be acceptable to the health authority before a special license shall be issued specifying the location of the site, the period of operation not to exceed ten days, any any conditions of issuance.

11.3
Structural Requirements for Buildings

(a) All portions of the structure shall be properly protected from damage by ordinary use and by decay, corrosion, termites and other destructive elements. Exterior portions shall be of such materials and be so constructed and protected as to prevent entrance or penetration of moisture and weather.

(b) All rooms containing sanitary or laundry facilities shall:

1. Have sound resistant walls extending to the ceiling between male and female sanitary facilities. Walls and partitions around showers, bathtubs, lavatories and other plumbing fixtures shall be constructed of dense, nonabsorbent, water proof material or covered with moisture resistant material.

2. Have at least one window or skylight facing directly to the outdoors. The minimum aggre-

gate gross area of windows for each required room shall be not less than 10 percent of floor area served by them.

3. Have at least one window which can be easily opened or a mechanical device which will adequately ventilate the room.

(c) Toilets shall be located in separate compartments equipped with self-closing doors. The shower stalls shall be of the individual type. The rooms shall be screened to prevent direct view of the interior when the exterior doors are open.

(d) Illumination levels shall be maintained as follows: (1) general seeing tasks—5 footcandles; (2) laundry room work area—40 footcandles; (3) toilet room, in front of mirrors—40 footcandles.

(e) Hot and cold water shall be furnished to every lavatory, sink, bathtub, shower and laundry fixture, and cold water shall be furnished to every water closet and urinal.

11.4

Barbecue Pits, Fireplaces, Stoves and Incinerators

Cooking shelters, barbecue pits, fireplaces, wood-burning stoves and incinerators shall be so located, constructed, maintained and used as to minimize fire hazard and smoke nuisance both on the property on which used and on neighboring property. No open fire shall be permitted except in facilities provided. No open fire shall be left unattended. No fuel shall be used and no material burned which emits dense smoke or objectionable odors.

SECTION 12: REFUSE HANDLING

12.1

The storage, collection and disposal of refuse in the travel trailer parking area shall be so conducted as to create no health hazards, rodent harborage, insect breeding areas, accident or fire hazards, or air polution.

12.2

All refuse shall be stored in flytight, watertight, rodent proof containers, which shall be located not more than 150 feet from any trailer space. Containers shall be provided in sufficient number and capacity to properly store all refuse.

12.3

Refuse collection stands shall be provided for all refuse containers. Such container stands shall be so designed as to prevent containers from being tipped, to minimize spillage and container deterioration and facilitate cleaning around them.

12.4

All refuse containing garbage shall be collected at least twice weekly. Where suitable collection service is not available from municipal or private agencies, the owner or operator of the travel trailer parking area shall provide this service. All refuse shall be collected and transported in covered vehicles or covered containers.

12.5

Where municipal or private disposal service is not available, the owner or operator of the travel trailer parking area shall dispose of the refuse by incineration or transporting to a disposal site approved by the health authority.

12.6

Refuse incinerators shall be constructed in accordance with engineering plans and specifications which shall be reviewed and approved by the health authority or other authority having jurisdiction.

12.7

Incinerators shall be operated only when attended by some person specifically authorized by the owner or operator of the travel trailer parking area.

SECTION 13: INSECT AND RODENT CONTROL

13.1

Grounds, buildings and structures shall be maintained free of insect and rodent harborage and infestation. Extermination methods and other measures to control insects and rodents shall conform with the requirements of the health authority.

13.2

Parking areas shall be maintained free of accumulations of debris which may provide rodent harborage or breeding places for flies, mosquitoes, and other pests.

13.3

Storage areas shall be so maintained as to prevent rodent harborage; lumber, pipe and other building material shall be stored at least one foot above the ground.

13.4

Where the potential for insect and rodent infestation exists, all exterior openings in or beneath any structure shall be appropriately screened with wire mesh or other suitable materials.

13.5

The growth of brush, weeds and grass shall be controlled to prevent harborage of ticks, chiggers and other noxious insects. Parking areas shall be so maintained as to prevent the growth of ragweed, poison ivy, poison oak, poison sumac and other noxious weeds considered detrimental to health. Open areas shall be maintained free of heavy undergrowth of any description.

SECTION 14: FUEL SUPPLY AND STORAGE

14.1

Liquefied Petroleum Gas

(a) Liquified petroleum gas containers installed on a trailer space shall be securely but not permanently fastened to prevent accidental overturning. Such containers shall not be less than 12 nor more than 60 U. S. gallons gross capacity.

(b) No liquified petroleum gas vessel shall be stored or located inside or beneath any storage cabinet, carport, trailer, or any other structure, unless such installations are approved by the health authority.

14.2

Fuel Oil Storage

(a) All fuel oil storage tanks or cylinders shall be securely fastened in place and shall not be lo-

cated inside or beneath any trailer or less than five feet from any trailer exit.

(b) Storage tanks located in areas subject to traffic shall be protected against physical damage.

SECTION 15: FIRE PROTECTION

15.1

The travel trailer parking area shall be subject to the rules and regulations of the (name of municipality) fire prevention authority.

15.2

Travel trailer parking areas shall be kept free of litter, rubbish and other flammable materials.

15.3

Portable fire extinguishers of a type approved by the fire prevention authority shall be kept in service buildings and at all locations designated by such fire prevention authority, and shall be maintained in good operating condition.

15.4

Fires shall be made only in stoves, incinerators and other equipment intended for such purposes.

SECTION 16: MISCELLANEOUS REQUIREMENTS

16.1

Supervision

(a) The person to whom a license is issued shall at all times operate the travel trailer parking area in compliance with this Ordinance and shall provide adequate supervision to maintain the travel trailer parking area, its facilities, and equipment in good repair and in a clean and sanitary condition at all times.

(b) Trailer spaces shall be rented by the day or week only, and the occupant of a trailer space shall remain in the same travel trailer parking area not more than .....days.

16.2

Registration of Occupants

Every owner or operator of a travel trailer parking area shall maintain a register containing a record of all trailers and occupants. Such register shall be available to any authorized person inspecting the travel trailer parking area and shall be preserved for the period required by the health authority. Such register shall contain (1) the names and permanent addresses of all trailer occupants; (2) the make, model and license number of the trailer and tow vehicle; and (3) the dates of arrival and departure of a trailer or its occupants.

16.3

Reporting Communicable Diseases

Every owner, operator, attendant or other person operating a travel trailer parking area shall notify the local health authority immediately of any suspected communicable or contagious disease within the travel trailer parking area. In the case of disease diagnosed by a physician as quarantinable, the departure of a trailer or its occupants or the removal therefrom of clothing or other articles which have been exposed to infection without approval of the health authority is prohibited.

16.4

Restriction of Animals and Pets

No owner or person in charge of a dog, cat or other pet animal shall permit it to run at large or to commit any nuisance within the limits of any travel trailer parking area.

SECTION 17: PENALTIES[4]

Any person who violates any provision of this Ordinance shall upon conviction be punished by a fine of not less than .....dollars nor more than .....dollars; and each day's failure of compliance with any such provision shall constitute a separate violation.

SECTION 18: CONFLICT OF ORDINANCES: EFFECT OF PARTIAL INVALIDITY

18.1

In any case where a provision of this Ordinance is found to be in conflict with a provision of any other ordinance or code of this (name of municiapilty) existing on the effective date of this Ordinance, the provision which, in the judgment of the health authority, establishes the higher standard for the promotion and protection of the health and safety of the people shall prevail. In any case where a provision of this Ordinance is found to be in conflict with a provision of any other ordinance or code of this (name of municipality) existing on the effective date of this Ordinance which establishes a lower standard for the promotion and protection of the health and safety of the people, the provisions of this Ordinance shall be deemed to prevail, and such other ordinances or codes are hereby declared to be repealed to the extent that they may be found in conflict with this Ordinance.

18.2

If any section, subsection, paragraph, sentence, clause or phrase of this Ordinance should be declared invalid for any reason whatsoever, such decision shall not affect the remaining portions of this Ordinance which shall remain in full force and effect; and to this end the provisions of this Ordinance are hereby declared to be severable.

SECTION 19: EFFECTIVE DATE[5]

This Ordinance shall be effective on and after the .....day of....., 19.....

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[4] Since the penalties which may be prescribed for violations will be governed by state constitutional or statutory limitations which vary from state to state, blank space in the Penalty Section of this Ordinance must be filled in by local authorities.

[5] In many states a local ordinance cannot become effective until it has been published or until a specific period of time after adoption has elapsed, etc. Even in the absence of such requirements, however, it will probably be considered advisable to prescribe an effective date which is at least 30 to 60 days later than the date of adoption of this Ordinance to give ample time for compliance.